

BUSINESS WEEK



Marketing's Irresistible Temptation:
Trading Stamps (page 43)

A McGRAW-HILL PUBLICATION

MAY 19, 1956

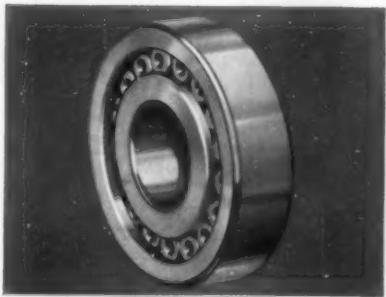
ANN ARBOR MICH
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UNIVERSITY MICROFILMS
E B POWER DS 81



Paul Bunyan's bowling ball proves bearings!

This game of tenpins would have been fine sport for the "great lumberman"! Yet, even Paul Bunyan would have taxed his strength in helping to clear as much as 50 acres an hour with this giant steel ball. ☆ Today's giant 'dozers, however, are doing this rugged job with ease. And, nearly every leading make is equipped with Bower Straight and Tapered Roller Bearings—proving their ability to stand up under such back-breaking pressure. That's why more manufacturers—regardless of product—depend on Bower Roller Bearings than ever before. They know that improved design plus painstaking quality control make Bower bearings last longer—require less maintenance. ☆ What about *your* product? If it uses bearings, choose from Bower's complete line of tapered, straight and journal roller bearings for every field of transportation and industry.

BOWER ROLLER BEARING DIVISION
FEDERAL-MOGUL-BOWER BEARINGS, INC. • DETROIT 14, MICHIGAN



TWO-LIP RACE INCREASES RIGIDITY

Two parallel shoulders, made integral with the outer race on this straight bearing, increase rigidity and durability—keep rollers in proper alignment. Precision-made rollers and races assure quieter, smoother operation.



BOWER

ROLLER BEARINGS

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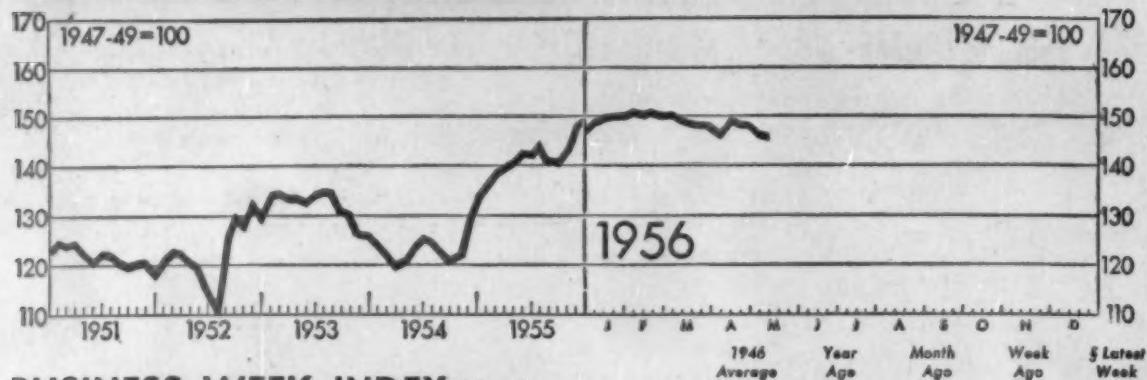
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FIGURES OF THE WEEK



BUSINESS WEEK INDEX (chart)

1946 Average	Year Ago	Month Ago	Week Ago	5 Latest Week
91.6	142.8	149.6	†146.6	*146.3

PRODUCTION

Steel ingot (thous. of tons).....	1,281	2,338	2,466	†2,343	2,355
Automobiles and trucks.....	62,880	221,746	175,678	†148,677	144,102
Engineering const. awards (Eng. News-Rec. 4-wk daily av. in thous.).....	\$17,083	\$74,265	\$75,090	\$83,711	\$73,871
Electric power (millions of kilowatt-hours).....	4,238	9,673	10,918	10,815	10,837
Crude oil and condensate (daily av., thous. of bbls.).....	4,751	6,681	7,156	7,084	7,029
Bituminous coal (daily av., thous. of tons).....	1,745	1,425	1,653	1,693	1,670
Paperboard (tons)	167,269	274,269	285,493	289,465	294,894

TRADE

Carloadings: miscellaneous and l.c.l. (daily av., thous. of cars).....	82	74	72	75	74
Carloadings: all others (daily av., thous. of cars).....	53	50	46	55	54
Department store sales (change from same wk of preceding year).....	+30%	+9%	-15%	†-1%	-7%
Business failures (Dun & Bradstreet, number).....	22	233	255	277	258

PRICES

Spot commodities, daily index (Moody's Dec. 31, 1931 = 100).....	311.9	401.7	423.0	418.1	420.2
Industrial raw materials, daily index (BLS, 1947-49 = 100).....	††73.2	91.5	100.3	97.6	96.8
Foodstuffs, daily index (BLS, 1947-49 = 100).....	††75.4	86.1	81.0	82.6	82.3
Print cloth (spot and nearby, yd.).....	17.5¢	18.7¢	19.5¢	19.4¢	19.2¢
Finished steel, index (BLS, 1947-49 = 100).....	††76.4	144.8	157.1	†158.0	158.0
Scrap steel composite (Iron Age, ton).....	\$20.27	\$34.33	\$55.50	\$53.17	\$50.33
Copper (electrolytic, delivered price, E & M, lb.).....	14.045¢	36,000¢	46,355¢	45,765¢	45,915¢
Wheat (No. 2, hard and dark hard winter, Kansas City, bu.).....	\$1.97	\$2.54	\$2.39	\$2.26	\$2.27
Cotton, daily price (middling, 14 designated markets, lb.).....	**30.56¢	33.81¢	35.55¢	35.46¢	35.57¢
Wool tops (Boston, lb.).....	\$1.51	\$1.95	\$1.74	\$1.73	\$1.72

FINANCE

90 stocks, price index (Standard & Poor's).....	135.7	295.3	380.5	382.8	370.9
Medium grade corporate bond yield (Baa issues, Moody's).....	3.05%	3.50%	3.69%	3.72%	3.73%
Prime commercial paper, 4 to 6 months, N. Y. City (prevailing rate).....	34.1%	2%	3%	3 1/4%	3 1/4%

BANKING (Millions of Dollars)

Demand deposits adjusted, reporting member banks.....	††45,820	56,234	56,211	55,896	55,559
Total loans and investments, reporting member banks.....	††71,916	84,214	85,447	85,448	84,887
Commercial and agricultural loans, reporting member banks.....	††9,299	22,721	27,683	28,053	28,031
U. S. gov't guaranteed obligations held, reporting member banks.....	††49,879	33,395	27,696	27,357	26,939
Total federal reserve credit outstanding.....	23,888	24,924	25,481	25,266	25,325

MONTHLY FIGURES OF THE WEEK

	1946 Average	Year Ago	Month Ago	Latest Month
Wholesale prices (U. S. Dept. of Labor BLS, 1947-49 = 100).....	April.....	78.7	110.5	112.8
Housing starts (in thousands).....	April.....	55.9	132.0	96.0
Bank debits (in millions).....	April.....	††\$85,577	\$158,296	\$189,793
Exports (in millions).....	March.....	\$812	\$1,344	\$1,357

* Preliminary, week ended May 12, 1956.
† Revised.

** Estimate.
†† Ten designated markets.

§ Date for 'Latest Month' on each series on request.

THE PICTURES—Russ Allen—173; Col Bernstein—152, 153, 154, 156; Dresser Industries, Inc.—135, 136; du Pont de Nemours & Co.—193 (lt.); Martin Harris—193 (can.); I.N.P.—169 (lt.); Jones & Laughlin Steel Corp.—114; Herb Kratovil—30, 31, 68, 69, 193 (rt.); Flora Lewis—142, 143 (bot. 2), 144; McGraw-Hill Illustration Dept.—95; Guido Organisci—143 (top); Pittsburgh Steel Co.—32 (lt. can.); Gene Pyle—195; Mike Shee—84, 85; U. P.—32 (lt. top & lt. bot.); U. S. Navy—106, 107; U. S. Rubber Co.—126; Westinghouse Electric Co.—130; W. W.—32 (top rt.), 169 (can. & rt.).

"VISION IS INDISPENSABLE TO PROGRESS"



From beans to battleships —the industry that wraps up progress

How many wrappers, tubes, bags, boxes, bottles and cans did you open this week?

Last year an estimated 255 billion packages were produced to protect products for shipment, display and sale. More than \$10 billion was spent for packaging materials alone — paper, glass, fibers, plastics, metal, wood and textiles.

In eye-catching displays, colorful, appealing packages rate high in creating sales. Modern packaging has also added new dimensions of convenience, orderliness and cleanliness

compared with the "cracker barrel" days of only 40 or 50 years ago.

Latest industry advances include transparent polyethylene — wonder plastic of food protection; heat-proof foils; amazing wet-strength papers; flexible, collapsible vinyl tubes.

Equipment that rolls out 450 cans a minute, X-ray inspection for high-speed canning, and new labeling

and printing methods are among other new and improved techniques.

"Packaging" can handle almost any demand — from tiny capsules to "mothballing" huge naval ships. Modern packaging typifies the imaginative, productive spirit stimulated by a free economy with the goal of greater abundance and happier living for all.

**BANKERS TRUST
COMPANY**

16 Wall Street, New York 15, N. Y. Rector 2-8900



Member
Federal
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"I talked with Guy F. Atkinson, chairman of the internationally known California construction firm which has built among others, the huge McNary Dam and Pasadena's Arroyo Seco Bridge (shown under construction above).

"If anyone should know the importance of safety it would be Mr. Atkinson, who says: 'When I started in the construction business, there was no such thing as workmen's compensation or safety engineers. When a man got hurt, a company took care of him and his family. So we had two things to worry about—our job and the man out of a job.'

"Now, Employers Mutuals has taken this latter concern out of our minds. Their safety engineers consult closely with ours, and help us to make accident prevention as much a part of our job as blueprints, bulldozers and concrete. And Employers Mutuals pays us substantial dividends for savings made possible thru accident prevention."

Employers Mutuals, with offices in 90 cities, writes all lines of fire and casualty insurance. We are one of the largest in the field of workmen's compensation. For further information see your nearest representative or call us in Wisconsin on our special line, Wausau 2-1112.

There's a little bit of Wausau in "sunny California"



A WAUSAU STORY

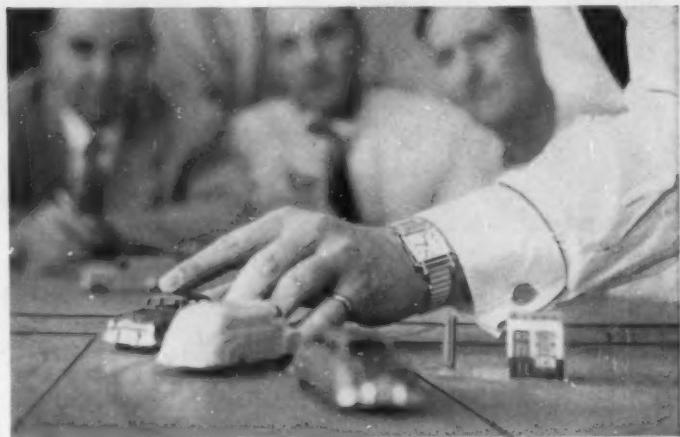
by EDWARD PRENDERGAST

Feature Writer,
Los Angeles Herald Express


"How far is it? . . . a little over two thousand miles from the North Woods of Wisconsin here to our Pacific Coast. Yet, as I found out, Employers Mutuals does business here in the same warm, personal way as among its Wisconsin neighbors at home. The friendliness of Wausau folks is really catching!"

"Until I took on this assignment, I didn't know any more

about Employers Mutuals as a company than you might. I'd heard they had a reputation as 'good people to do business with'. But it wasn't until I got out and met a few Employers Mutuals people and their policyholders that I began to get an idea that here are people with a very unusual approach to insurance problems. They seem to have a knack for getting through to the heart of the problem . . . the human side. They emphasize fairness, they listen, they have a strong belief in preventing accidents rather than just waiting for them to happen. These pictures and captions tell you the story."



"Playing with toys . . . to save lives. Imagination can do a lot to make people safety conscious. Here's a good example. The Frito Company's Western Division wanted some dramatic way of impressing safety on the drivers of all company cars and trucks. With the help of Paul Kacher, an Employers Mutuals' safety engineer, they found a unique solution. Once a month on Saturday mornings a Frito committee

plus Mr. Kacher (who volunteers his time) reviews all company vehicle accidents, if any, during the past month. Each accident is carefully reconstructed on a board with streets marked—using toy cars. The committee and Mr. Kacher try only to determine the cause of an accident and how it could have been prevented. It's surprising the positive thinking that results from these sessions. Frito's safety record proves it!"



Employers Mutuals of Wausau

"Good people to do business with"

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READERS REPORT



Whirly-Bird Fan

Dear Sir:

That was a splendid story on the Detroit industrialist and his helicopter [BW—Apr. 21'56, p114].

It was of particular interest to us since we, too, are "whirly-bird" fans. As a matter of fact, we now own a slick, new Hiller Helicopter (see above).

We employ a licensed pilot for this ship, Dick Doyle, who also flies our little airplane. It is our plan to use Miss Duo-Fast for various promotion work, such as flying our executives and engineers to plants in the area where their services are required. We also use it to pick up customers at the Chicago airports and fly them over to our suburban plant where we have a landing field. . . .

HAROLD G. ARANDA

FASTENER CORP.

CHICAGO, ILL.

India Walks Tightrope

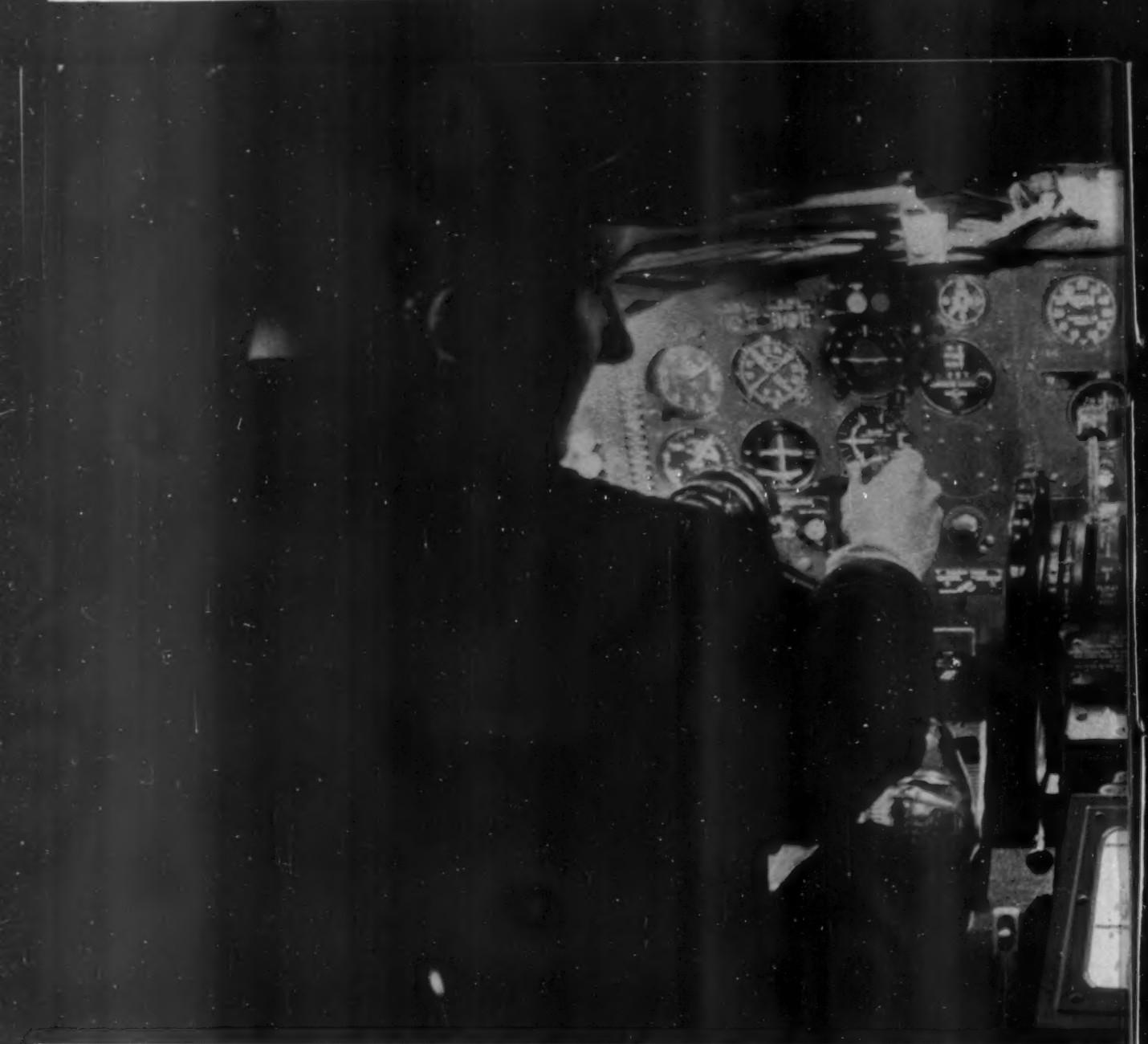
Dear Sir:

I read your special report India Walks Tightrope Into the Industrial Age [BW—Apr. 7'56, p119] and want to congratulate you on the excellent presentation. . . .

You will, of course, not expect me to agree with all that you say. More particularly, you may have gathered from recent stock exchange information from India that the private investor in India is more optimistic than he would himself concede. You may have gathered, for instance, that the share quotations are showing a rising trend, that the debenture issue of the National Carbon Co. was over-subscribed and that the Tatas and the Associated Cement Co. are shortly planning to issue fresh equity capital of a substantial magnitude at a premium. It is

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1,000 TIMES MORE SENSITIVE THAN A TELEVISION CAMERA, this optical amplifier (shown center foreground) now being

SUPER-TV GIVES PILOT WITH DAYLIGHT BRIGHT

On a black, moonless night, recently, U. S. Airmen flying over the Wright Air Development Center at Dayton, Ohio, saw ground installations with daylight brightness. They saw by means of a new optical amplifier, conceived by the Aeronautical Research Laboratory, and popularly known as "Cat Eye." It greatly intensifies light which is always present but unseeable by the human eye.

Westinghouse has been asked to perfect the key transducer for this amazing electronic instrument, already 1,000 times more sensitive than a television camera.

Results have been achieved by Westinghouse which were considered hardly possible by other companies. Westinghouse was a logical choice. For nearly eight years, the X-ray Image Intensifier, invented by Westinghouse, has been lifting the horizon of sight. With it, doctors can see clearly what goes on inside the body—the heart beating, food being swallowed, lungs breathing.

In fact, modern radio and television were born at Westinghouse. No one ever heard an officially scheduled broadcast until Westinghouse radioed the Harding-Cox



perfected for the U. S. Air Force will enable pilots to see in the dark with daylight brightness. Pilots view the ground on a TV screen.

PICTURES OF GROUND NESS ON DARKEST NIGHT

election returns in 1920. No one ever saw all-electronic television until Westinghouse staged a five-mile telecast in the late 20's.

Last year Westinghouse produced the first 22-inch all-glass, rectangular, shadow-mask color TV tube, the most advanced in the industry. Now Westinghouse experience will help to improve the "Cat Eye" system so that U. S. airplanes can see at night.

For everything in electronics "You can be *sure*, if it's Westinghouse."

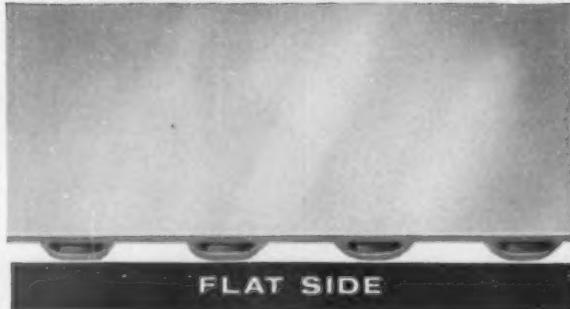
**WATCH
WESTINGHOUSE!
WHERE BIG THINGS
ARE HAPPENING TODAY!**

Industry Demanded It!

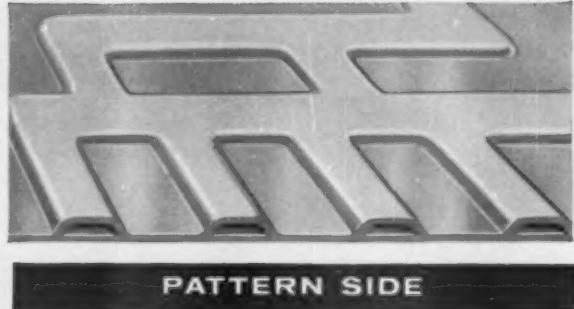
Reynolds Invented It!

REYNOLDS ALUMINUM TUBED SHEET One-Side-Flat

(Patent Pending)



FLAT SIDE



PATTERN SIDE

**The exciting new material to complement
your design and engineering skill**

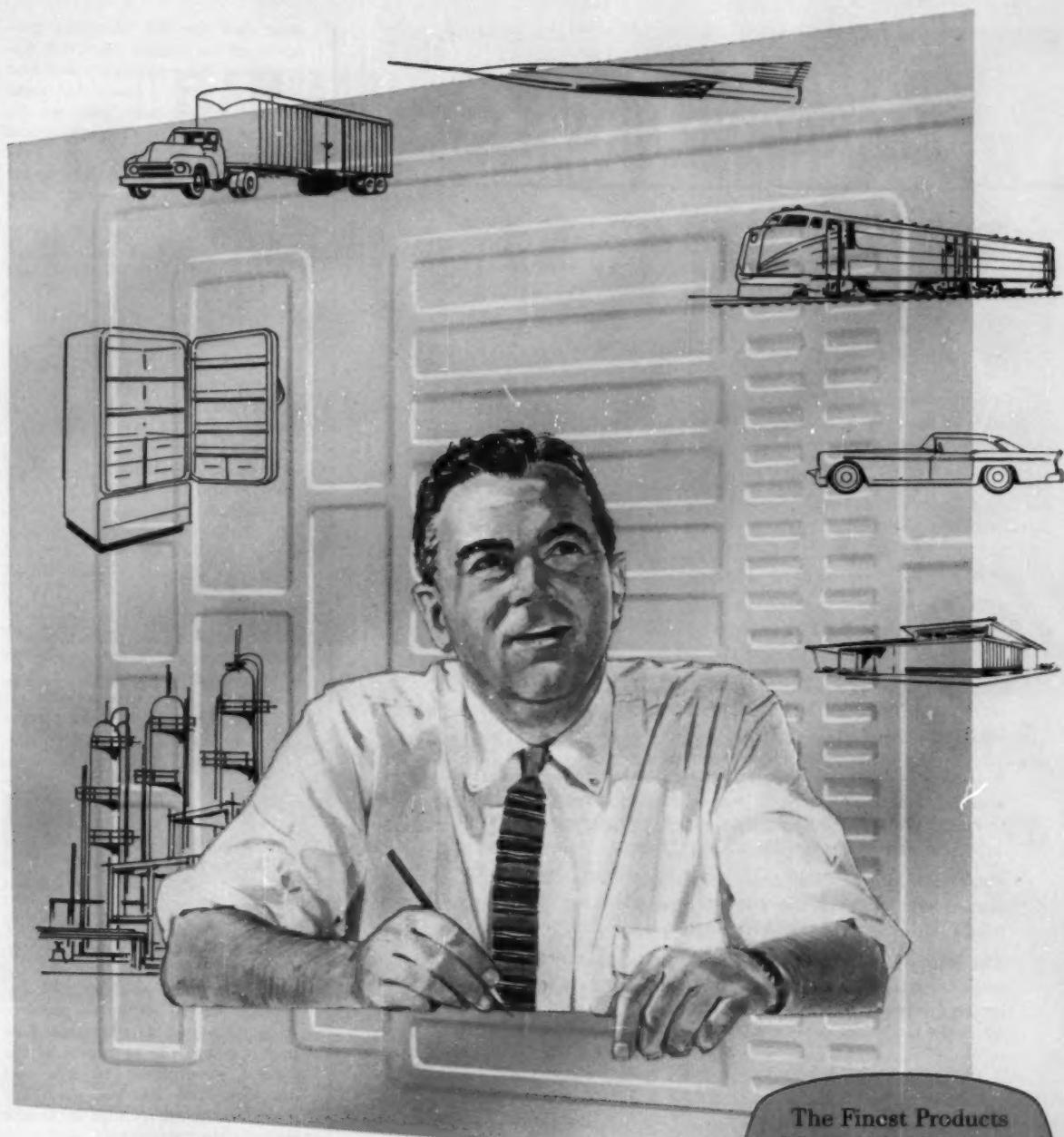
Reynolds new Tubed Sheet *One-Side-Flat* is the only sheet with one flat side providing integral tubing in any parallel or non-parallel patterns no matter how complex! Tubed Sheet *One-Side-Flat* (two sheets of aluminum metallurgically bonded together so that the heat transfer passageways are *in the sheet*) is flat on one side and has the built-in tubing pattern on the other side. This amazing material routes gas or liquid wherever needed with greater freedom and greater efficiency and at lower costs.

Like the original Reynolds Tubed Sheet that has its integral tubing pattern expanded on both sides and is widely used in the refrigeration industry, this exclusive new Reynolds development is exciting interest in the refrigeration and other industries because it promises even more advantages.

For example, in refrigerator evaporators, Tubed Sheet *One-Side-Flat* permits direct contact of the flat side with food packages and ice cube trays

thus speeding heat transfer, providing faster freezing. As a *skin for aircraft*, its flat side provides a smooth exterior and the entire sheet can be cooled through the integral tubing offering a possible solution to the "heat barrier" faced by supersonic planes. In *radiant heating panels for buildings*, its flat surface can be finished in a variety of decorative ways and used to face room interiors while hot water is circulating through the integral passageways on the other side of the sheet.

Why not investigate Reynolds Tubed Sheet *One-Side-Flat* for application in your industry? Whether transportation, chemical, petroleum, construction, appliance or other industry, you'll find it an intriguing new material—for amazingly flexible heat transfer use or for other uses your ingenuity may devise. For details contact your nearest Reynolds Office or write direct. *Reynolds Aluminum Fabricating Service, 2085 South Ninth Street, Louisville 1, Kentucky.*



Write for free 24-page "Catalog of Facilities". Get full details on the tremendous production facilities of Reynolds Aluminum Fabricating Service.

The Finest Products
Made with Aluminum

are made with

REYNOLDS ALUMINUM

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EXTRUDING • ROLL SHAPING • TUBE BENDING • WELDING • FINISHING

THE PACKAGING NEWSFRONT

Low-cost, fire-resistant, retractable, sound-barrier curtains, developed originally for industrial use by the TransWall Coated Products Plant of Bemis, have now been adapted for use in churches and schools.

Given an attractive finish and made in a choice of colors, the new curtains, called **Bemiswall Curtains**, permit the division of basement space, or meeting halls, etc., into extra rooms.

Installation is easy. A single overhead track . . . straight or curved . . . with nylon rollers supports the curtain.

Since **Bemiswall** has minimum slack width . . . a 20-foot wall retracts to only 2 feet . . . the curtains can be instantly slid out of the way when the entire floor space is desired.

TransWall Coated Products offers to send a sample of **Bemiswall** on request. The address is 610-R South 4th Street, Minneapolis 15, Minnesota.

A saving in container cost of about 85 cents on each hundred-weight of material shipped was achieved, through switching to Bemis Waterproof Bags, by a company making export shipments of powdered aluminum.

Principal requirements of the shipping container were that it **protect against moisture and be strong enough to take the rough handling of export shipment.**

The **Bemis Bags**, made of tough burlap laminated with water-resistant adhesives to multiple plies of paper, met both requirements completely. Moreover, the 100-lb. bags **cost only about 40 cents each, as compared with about \$1.25 for the drums of equal capacity which were previously used. There is also a substantial saving in empty container storage space.**

You can answer so many needs with **Bemis products . . . both in and out of the packaging field**. If you need a package that **will increase sales, give better protection to your product, or simply save you money . . .** or if you are interested in other **Bemis developments in paper, textiles or plastics . . . consult us**. Bemis products meet an astounding number of industrial, commercial and recreational requirements, and new uses are continually coming to light. You may want our engineers to **create a new package, or to advise you on packaging methods**. Please write us.



408 D Pine Street
St. Louis 2, Mo.



clear that the tax measures proposed in the budget have not disheartened the responsible business leaders in India. I know that some leading businessmen continue to criticize the Indian government and complain of uncertain future outlook and inadequate opportunity. Their actions are, however, more eloquent than their words.

G. R. KAMAT

EMBASSY OF INDIA
WASHINGTON, D. C.

A Little Learning

Dear Sir:

Having been brought up in a school that says you can't have what you can't pay for, I wonder why you have an editorial advocating federal aid for education [BW—Apr. 21 '56, p196—Time Runs Out].

I assume this support is based on the assumption that an educated citizenry is less expensive to the country as a whole. If our people were to be getting, and be able to absorb, a complete education, I would be for any method of payment, as the means would be ultimately self-correcting. Unfortunately, experience appears to indicate that as usual "a little learning is a dangerous thing" and that in federal help we incur two serious, lasting, and proliferating disabilities: 1) Increased government control, and 2) individual belief in a right to receive assistance rather than to earn it. . . .

LIONEL L. JACOBS
WAYNE, PA.

* We recognize the danger of government control of education as a problem. But we think that machinery can be set up to preserve local autonomy at the same time that it brings the resources of the federal government to bear on problems that are too great for states and municipalities to handle alone.

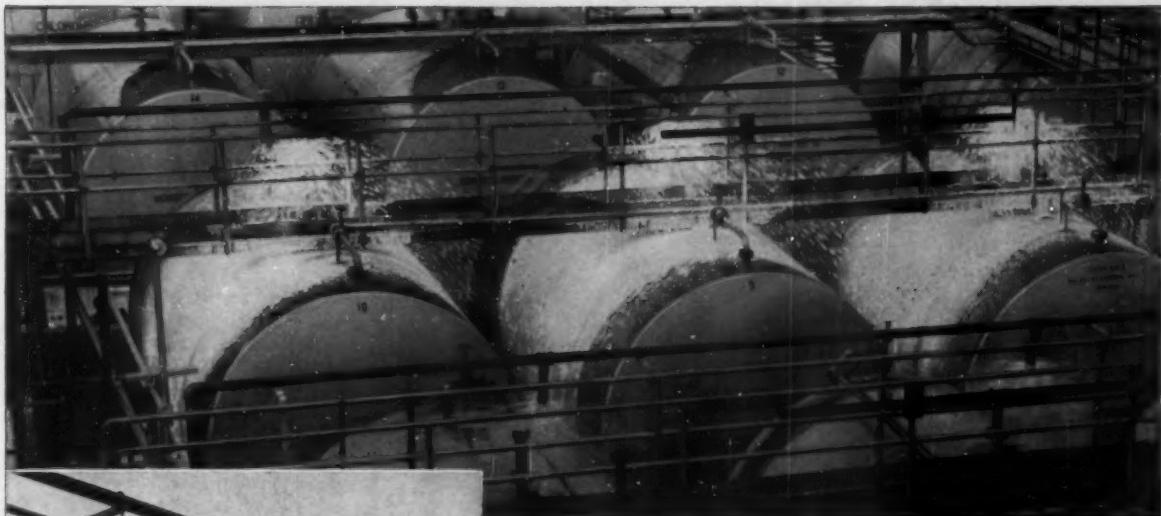
Phantom Olds

Dear Sir:

. . . The article Auto Supplier With A Secret: Be Small and Dispensable [BW—Apr. 21 '56, p180] was of special interest as I have and drive what I thought was a station wagon. According to this article, I don't seem to have a wagon, as it says, "And this fall will begin production of Oldsmobile's 1957 station wagons, that factory's first venture into wagons."

Maybe I'm driving a phantom that doesn't exist, but the salesman sold it to us new in 1949 and regis-

FLAMMABLE CHEMICAL STORAGE SAFEGUARDED BY SPECIAL GRINNELL SYSTEM



Protection of stored alcohol and monochlorobenzene is entrusted to a foam system installed by Grinnell. In the event of fire, flame-smothering foam covers the manhole, the most hazardous part of the tank; at the same time building up a foam blanket in the dyked area at base of tanks to kill fire there. (See test operation photos above.)

At the Rohm & Haas Company, mechanical foam, one of many special Grinnell fire protection systems, is used for fire hazards involving flammable liquids . . . such as in tank storage of chemicals; oil and paint rooms; loading racks; creosote tanks; pump houses; and processing rooms. Mechanical foam operates by shutting off the oxygen from the flammable vapors — and by insulating against the heat of the fire. It is flexible and adaptable; floats on liquids, flows over and around obstacles, clings to solids.

Call on Grinnell for help with your fire protection problems. Grinnell engineers are trained to evaluate your property and to advise on the proper system for your hazard. With a full range of equipment and more than 86 years experience in fire protection work, you are assured of unbiased recommendations which will be fitted to your exact needs. Grinnell Company, Inc., 265 West Exchange Street, Providence, R. I.

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Fire Protection Systems Since 1870



There's a GRINNELL Fire Protection System for every fire hazard

- Automatic spray sprinklers — wet pipe, dry pipe, and Simplex systems
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- Emulsion and vapor dilution extinguishment — Mulsifyre and ProtectoSpray systems
- Water spray for cooling, insulation, and controlled burning — ProtectoSpray systems
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- Carbon dioxide blanket — C-O-Two systems
- Dry chemical systems



We Suggest You Consider The Qualifications of This Motor

Representative of the Lamb Electric Motors now in service driving many types of products, this motor:

First, was designed for the particular job to be done, assuring optimum product performance.

Second, was developed and manufactured by personnel having many years of experience in the small motor field.

Third, was custom manufactured on a volume basis.

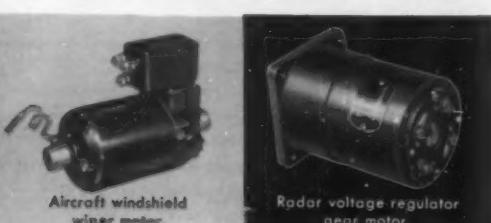
For these and other reasons, use of a Lamb Electric Motor usually results in an improved product . . . and lower overall costs. May we demonstrate?

THE LAMB ELECTRIC COMPANY • KENT, OHIO
In Canada: Lamb Electric—Division of Sangamo Company Ltd.—Leaside, Ontario

Lamb Electric
SPECIAL APPLICATION FRACTIONAL HORSEPOWER MOTORS



Precision-built
instrument motor.



Aircraft windshield
wiper motor.



Radar voltage regulator
gear motor.

tered it as a 1949 Olds station wagon. It has the wood panels, has two seats with the rear one that folds into and makes a 7-ft. even floor and has the famous 88 Rocket motor. This phantom has over 60,000 miles on it and I still wouldn't trade it for anything but a new station wagon.

EVERETT L. STRINGER
LOS ANGELES, CALIF.

* Reader Stringer's 1949 Oldsmobile station wagon is no phantom. BW was misinformed.

Varmint-Hunting

Dear Sir:

Your espousal of "varmint-hunting" in Personal Business [BW—Apr. 14 '56, p181] came as a considerable surprise. In this day of the scientific approach to wild life management such practices have no standing. They are, of course, still promoted by the arms and ammunition manufacturers as a means of disposing of their products when legitimate seasons are closed. The word varmint itself is an outmoded word of no significance and has no place in modern thinking.

. . . The number of states where all hawks and owls are protected is increasing as the place of hawks in the entire wild life ecological picture becomes clearer and better understood. Prairie dogs are practically eliminated already, and the only important villages remain within the national parks where, fortunately, these rodents are protected. Rockchucks and marmots are creatures of the high places, where they're doing no harm to anybody and are certainly not varmints.

Your article is an unfortunate step backward in wild life conservation thinking.

RICHARD W. WESTWOOD
PRESIDENT
AMERICAN NATURE ASSN.
WASHINGTON, D. C.

Dangerous Potshots

Dear Sir:

Your trend Canada: Potshots Can Be Dangerous [BW—Apr. 14 '56, p200] is a timely one and I am happy to see at least one prominent magazine come out with an argument against this anti-Americanism that seems to be creeping into Canadian publications. While you are answering your Canadian critics I hope you will listen to one who is not a critic but a booster, and certainly there are many Canadians who have a sensible



Offices...where and when you want them...

**J-M Class A Asbestos Walls are movable . . . save space and make space
... are noncombustible, moderately priced . . . come in pleasing colors**

New Johns-Manville Class A Movable Walls offer you advantages never before combined in an asbestos movable wall. They are modestly priced. They are noncombustible. They have a textured, stipple finish in restful colors. They reduce maintenance and relocation costs to a new low.

The finish of Johns-Manville Class A Movable Walls is a tough, hard film much thicker than on the usual movable partition. It is mar- and scratch-resistant . . . rejects stain and soil . . . can be easily washed and even scrubbed, if necessary. If damaged, it can be touched up inexpensively to look like new . . . and, unlike other types of fac-

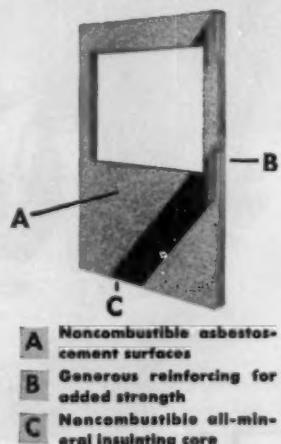
tory-finished partitions, can be repainted with ordinary paint.

Undivided responsibility for a complete job

These flush or glazed partitions are erected as well as furnished by the Johns-Manville Construction Department complete with doors, door hardware, glass and trim.

Johns-Manville Movable Walls are available in several types to meet varying budget considerations. For details, write Johns-Manville, Department BW, Box 158, New York 16, New York. In Canada, write 565 Lakeshore Road East, Port Credit, Ontario.

See "MEET THE PRESS" on NBC-TV, sponsored on alternate Sundays by Johns-Manville



Johns-Manville

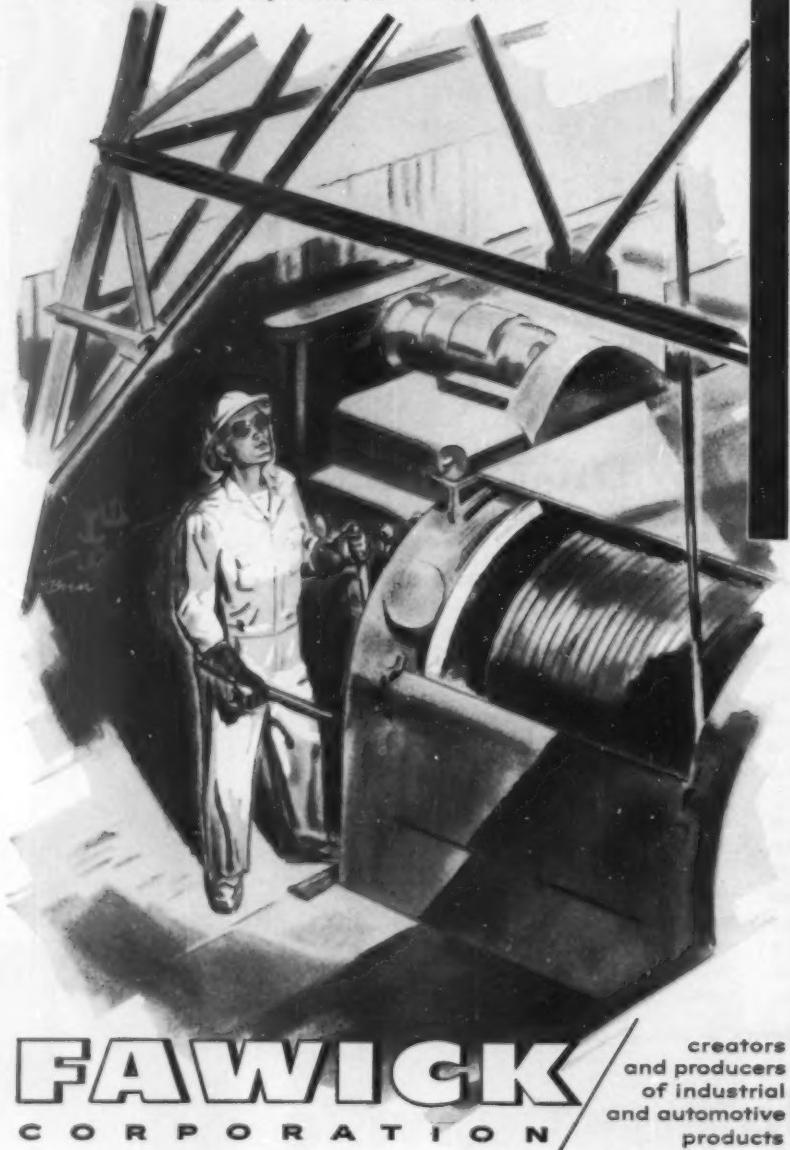
making power behave

Fawick helps him drill for "black gold"

In the complex, costly job of drilling oil wells, the driller runs the show. He operates his rig skillfully—controlling its great power with FAWICK Airflex Clutches. He has the help of as many as a dozen FAWICK units on tough, gruelling applications that can mean sudden death for clutches.

But FAWICK Clutches stay on the job . . . give instant, shock-free engagement . . . assure uninterrupted drilling . . . require minimum maintenance. Thus, they have become standard equipment in the drilling industry.

This is another example of FAWICK's progress in *making power behave*. FAWICK Corporation, Cleveland 11, Ohio.



FAWICK
CORPORATION

creators
and producers
of industrial
and automotive
products

view and have not as yet been heard.

Certainly some newspapers and magazines in Canada have taken up a dangerous subject and what is not understandable, is that the tone is in direct opposition to what we have heard from the same writers when they advocate a United States of Europe; they are seemingly appalled that the countries over there cannot cooperate. It seems to be an attitude of "Not for me but okay for you, Joe."

Alarming, too, is the thought that such minority thinking, and I am sure it is so, is allowed to be so vociferous. Surely they can see that we, the U. S. and Canada, are tied very closely together; we have come from the same stock and physically and economically one cannot do without the other. It is inevitable that our ties become greater and stronger in the future, and I wonder if these dreamers who propagandize anti-Americanism have stopped to realize Canada's position in the event of another war.

Your editorial was a welcome one, but what is needed today is a committee of Americans and Canadians set up to not only combat such suicidal propaganda but to work conscientiously towards better understanding, and let us go a step further—a United States of North America.

JOHN P. STARK
VANCOUVER, B. C., CANADA

Just a Yellow Rock

Dear Sir:

Your recent item with regard to changes in diamond color induced by atomic radiation [BW—Mar. 24 '56, p36] merits some comment.

Although it is true that the blue and green colors arising from such treatment are not permanent, it is doubtful that "many a bride returned from the honeymoon to find that her sparkler was fading into an ordinary yellow rock." These colors should persist for millennia at ordinary temperatures; even if the gems are continually immersed in boiling water, the tints can still last for centuries. Much higher temperatures are required to cause irradiated diamonds to revert to their original color within a reasonable time.

The rise of radiation as a factor in the diamond business has enhanced the possibilities of misrepresentation. Its importance to traders in cut stones is quite obvious, but the effect on the diamond manufacturer is more subtle.

Q.

Could chemical science find a way to keep textiles, leather and other porous materials dry, without impeding air circulation?

A.

**INVISIBLE BARRIERS THAT SAY
STOP TO WATER, GO TO AIR**



There's a lot more to the science of water repellency than just keeping water *out*. For many materials have "pores" that must be allowed to "breathe" freely.

DRI-FILM® silicones are a General Electric chemical contribution achieving durable *water* repellency without *air* repellency. In textiles and leather, for example, invisible silicone barriers stop water from penetrating—yet permit moisture and perspiration to evaporate freely. Masonry structures, protective hand creams—these, too, find silicones the way to say "stop" to water, "go" to air.

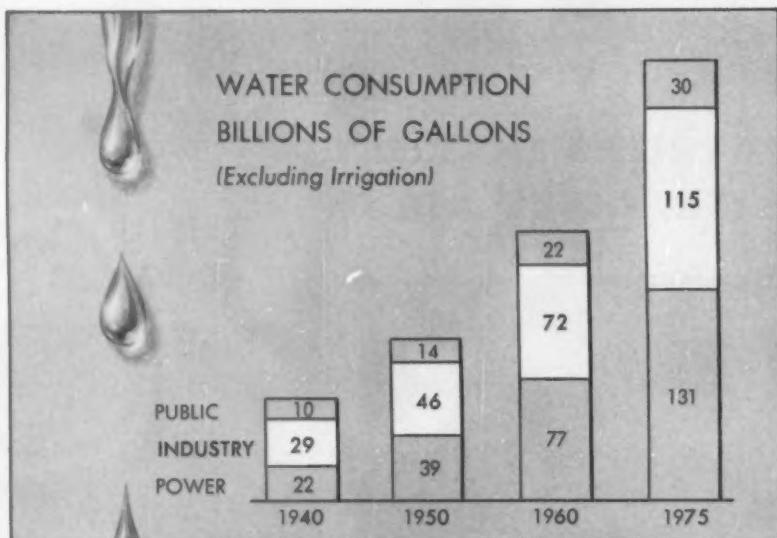
These new silicone water repellents also do important jobs where porosity is no problem—waterproofing

electric motors...imparting water resistance to paints. They're another example of progress for all—through G-E chemical progress.

• • •
For new developments in Plastics Compounds, Silicones, Electrical Insulating Materials, Industrial Resins and Varnishes, Plastics Laminating and Molding . . . write for "G-E Chemical Products" Booklet (CDG-101) to: **CHEMICAL AND METALLURGICAL DIVISION, General Electric Company, Section 6G2A2, Pittsfield, Mass.**

Progress Is Our Most Important Product

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What to do when

WATER SHORTAGES

threaten Your business

Within 20 years, the public and industry will need twice as much water. In some areas, wells are running low . . . stream pollution is serious. New resources will cost billions . . . if they can be found at all. It's not too early to take strong measures in your business.

Install water meters to check and report on consumption in your plant. The meters will uncover hidden leaks and careless habits. They will show where you can save by installing automatic shut-off devices, by improving heat exchangers, by changing processes, by recirculating or reconditioning water for re-use.

Though Neptune now makes more than meters, water conservation is our biggest business, growing rapidly with the nation's needs for water. Over ten million Trident water meters now in use. We'll be glad to consult with you.

NEPTUNE METER COMPANY, 19 W. 50th St., New York 20, N. Y.

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for a better measure of profit

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Revere Corporation of America	aircraft instruments & wire
Superior Meter Co.	gas meters
Cox & Stevens	electronic scales
Electronic Signal Co., Inc.	toll collection equipment

There has been a lively trade in unirradiated green rough diamonds for a long time; an appreciable fraction of these turn blue during the grinding and polishing operations. There have been complaints that the fraction is decreasing. The explanation may be that yellow roughs, turned green by irradiation, are surreptitiously finding their way into the market; these would soon become yellow again at the high temperatures generated in the grinding operation.

It is already clear that atomic radiation is achieving importance in the diamond trade. It can produce a genuine and lasting upgrading in the color of the product and it can also find widespread use for illegitimate purposes. Technical advances in the studies of irradiated gems are being made which may have an even greater impact on the industry . . .

JOSEPH SILVERMAN
TECHNICAL DIRECTOR
RADIATION APPLICATIONS INC.
NEW YORK, N. Y.

Mexican Carpets

Dear Sir:

We were extremely interested to read your Marketing brief [BW—Apr. 7'56,p50] about nylon becoming increasingly important in the U. S. carpet business, and that a new technique using nylon gives the effect of wool.

Our firm has been using nylon in carpeting for five years. With the cooperation of the laboratories of Celanese Mexicana, S. A., we were the first to develop a combination of nylon, acetate and viscose fiber, to the complete exclusion of wool. Exhaustive tests have proved that this combination of fibers outlasts the best woolen carpeting by a wide margin.

Despite the fact that our materials are the most modern, and apparently ahead of the development in the U. S., our carpets are woven on 200-year old looms entirely by hand by master weavers of the town of Amecameca. Through large orders placed with our company by the Intercontinental Hotels Corp., the U. S. Dept. of State, and the Bank Building and Equipment Corp., this new product can now be found in over 20 countries and is building up a considerable amount of dollar exchange for Mexico.

PAUL BROWN
PRESIDENT
TAPETES DE MEXICO, S. A.
ROSARIO NO. 10
AMECAMECA, EDO. DE MEXICO



Marron Kendrick, President of Schlage Lock Co., tells how

"I locked up 565 guests!"

"Building the luxurious Fontainebleau Hotel in Florida was tightly scheduled — with 565 guests due at the opening!

"Our problems were to create a special lock design, obtain model approvals, and install the locks before the great day. But could our San Francisco plant compete with other firms many hundreds of miles nearer the construction site?

"Yes — thanks to Air Express!

"The designs, the models, and the last-minute changes were all flown Air Express for customer O.K. Air Express

service gave us valuable added production time . . . End of story: the locks were in before the first guest!

"Delivering anywhere in the country in a few hours, Air Express is like having a factory in every state. We can bid successfully against *any* competition, no matter how local it is. That's because Air Express, in daily use, has never failed us! Yet, sending most of these shipments Air Express costs surprisingly little. For instance, 10 pounds, San Francisco to Miami, with overnight delivery, costs only \$9.54 door to door!"

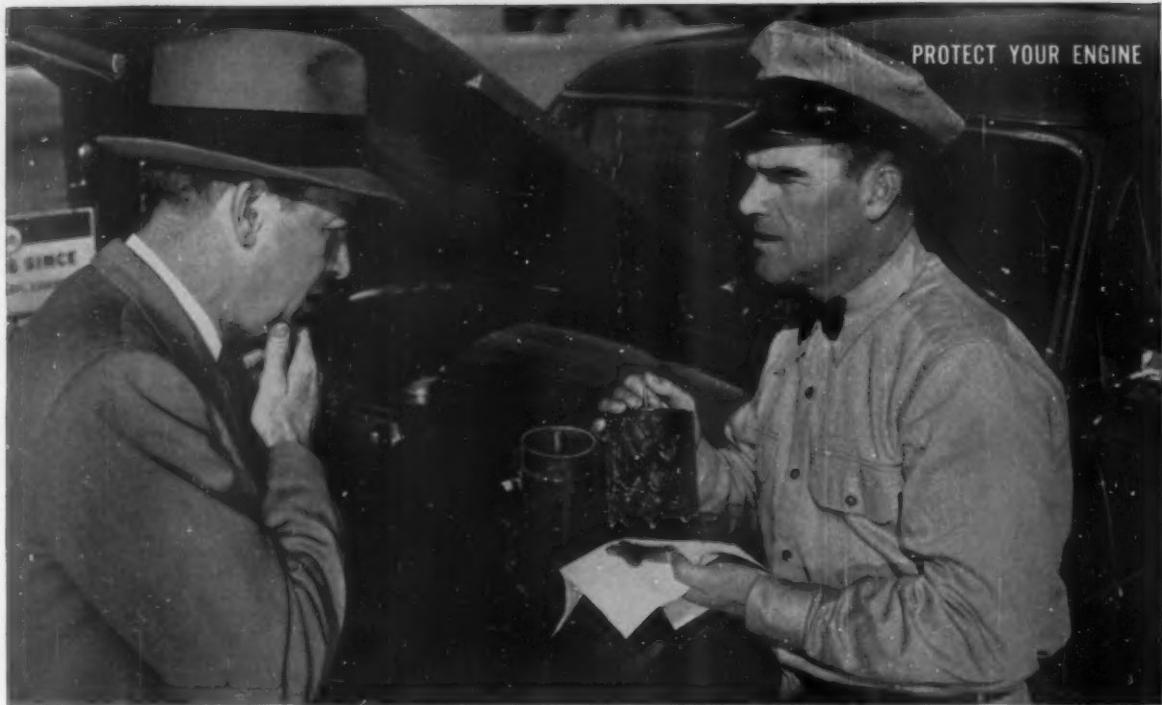


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FOR MORE THAN 5,000 MILES, this oil filter has protected an engine by keeping dust, hard carbon and sludge from engine parts. Using porous paper made by paper mills from Hercules® chemical cotton as a filtering material, this equipment is one of the most important items in helping you to get the most in trouble-free miles from your car. (Photo courtesy PurOlator Products Inc.)

QUICKLY INSTALLED sheets of gypsum board are helping to produce new homes faster and more economically. To provide the surface of these sheets with the required water resistance, many manufacturers rely on Hercules Pexol® 240—one member of the large family of Hercules sizes for the paper industry.



HIGH GRADE COTTON is the product of healthy cotton plants. Insecticides based on Hercules® toxaphene help produce premium fiber by keeping the plants sturdy and free from insect pests that discolor the lint and increase trash content. Toxaphene means higher quality cotton at lower insecticide cost.



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606-3

HERCULES
CHEMICAL MATERIALS FOR INDUSTRY

BUSINESS OUTLOOK

BUSINESS WEEK
MAY 19, 1956



Short range or long range, however you look at it, McGraw-Hill's new survey of business plans for expansion and modernization holds great promise of basic stability in our economy (pages 23, 28, 204).

Expenditures have not, as many had thought, reached the leveling-off point. They'll be rising throughout this year.

Their contribution: roughly 10% of all business activity.

Beyond this, business has already programmed as much again for 1957—and nearly as much for 1958 and 1959.

Authorized plant outlays, not just blueprints, virtually guarantee heavy industry at least a boom right through to 1960.

These may not absolutely rule out bubbles in other parts of the economy. (Mild troubles now attest this fact.) But a continuing capital-goods boom is a potent base for employment and purchasing power.

Painstaking studies of the country's potential by 1965, or even 1975 in many cases, have laid industry's fears of overcapacity.

Nothing short of the rudest kind of jolt will shake spending plans.

Strong spots in today's business aren't hard to trace among the components of the Federal Reserve Board's industrial production index.

Over-all, output is doing just about as expected for the time of year. April's index number of 142 (seasonally adjusted) continued to trace the straight line the curve has been following in recent months.

But, to keep it there, machinery output had to soar to new highs, for output of hardgoods for consumers was 13% below last year's top.

Part of April's gain in machinery output was due to the ending of the Westinghouse strike, of course. Production of electrical equipment bounded to a level just about matching its 1955 peak.

Nonelectrical machinery, meanwhile, topped 1955's best by 5%.

Further advances in machinery output—implicit in industry's buying plans for new plant and equipment—would seem to rule out any serious adjustment in inventories.

Yet the fact remains that slowness in housing and autos (whether due to tight money or not) has temporarily cut into use of metals.

Autos now seem headed for a second-quarter output total not much better than 1.6-million cars.

Not only would that be nearly 200,000 below industry expectations of only a few weeks ago; it also would fall a little short of actual output during this year's first quarter.

You have to go back a long way to find a drop between first and second quarter. (1951 had one, but only due to a Korean arms pinch.)

Sales of new motor cars, both domestic and export, apparently came to nearly 2.2-million for the first four months of the year.

BUSINESS OUTLOOK (Continued)

BUSINESS WEEK
MAY 19, 1956

Due to reduced output, that resulted in an inventory buildup of only 100,000; in the same period last year, stocks were growing by about 400,000 cars. But look at these differences, too:

- Inventories were low (only about 360,000) at the start of 1955; they were at near-record levels (more than 800,000) as 1956 opened.
- Dealers' sales were rocketing as early as March last year; today, even sacrifice prices won't spur them (BW—May 12 '56, p24).

—●—

Value of all construction so far this year has almost exactly held even with the same 1955 period.

But it has taken record outlays on industrial and commercial structures to offset the deepening decline in residential building. (Here again you see the impact of business spending for expansions.)

Industry laid out more than \$900-million on new factories in the first four months of this year, 22% ahead of 1955. Commercial construction topped \$1-billion for a gain of 25%.

If there is any danger in the expansion rate, it doubtless would show up in the commercial sector.

These programs are keyed much closer to consumer spending levels than are factories, and they can be turned on and off more quickly. Thus commercial outlays—stores, warehouses, offices, etc.—suffer from a temporary buying dip.

Expenditures on housing far outweigh the totals for either industrial or commercial building (something like four to one). Yet the year-to-year lag in housing is small, gains in the other two large.

Thus the dollar gap of nearly \$300-million for housing (\$4.4-billion this year against \$4.7-billion in the four months last year) is closed handily by the industrial-commercial categories.

The pickup in housing, widely predicted, still isn't in sight.

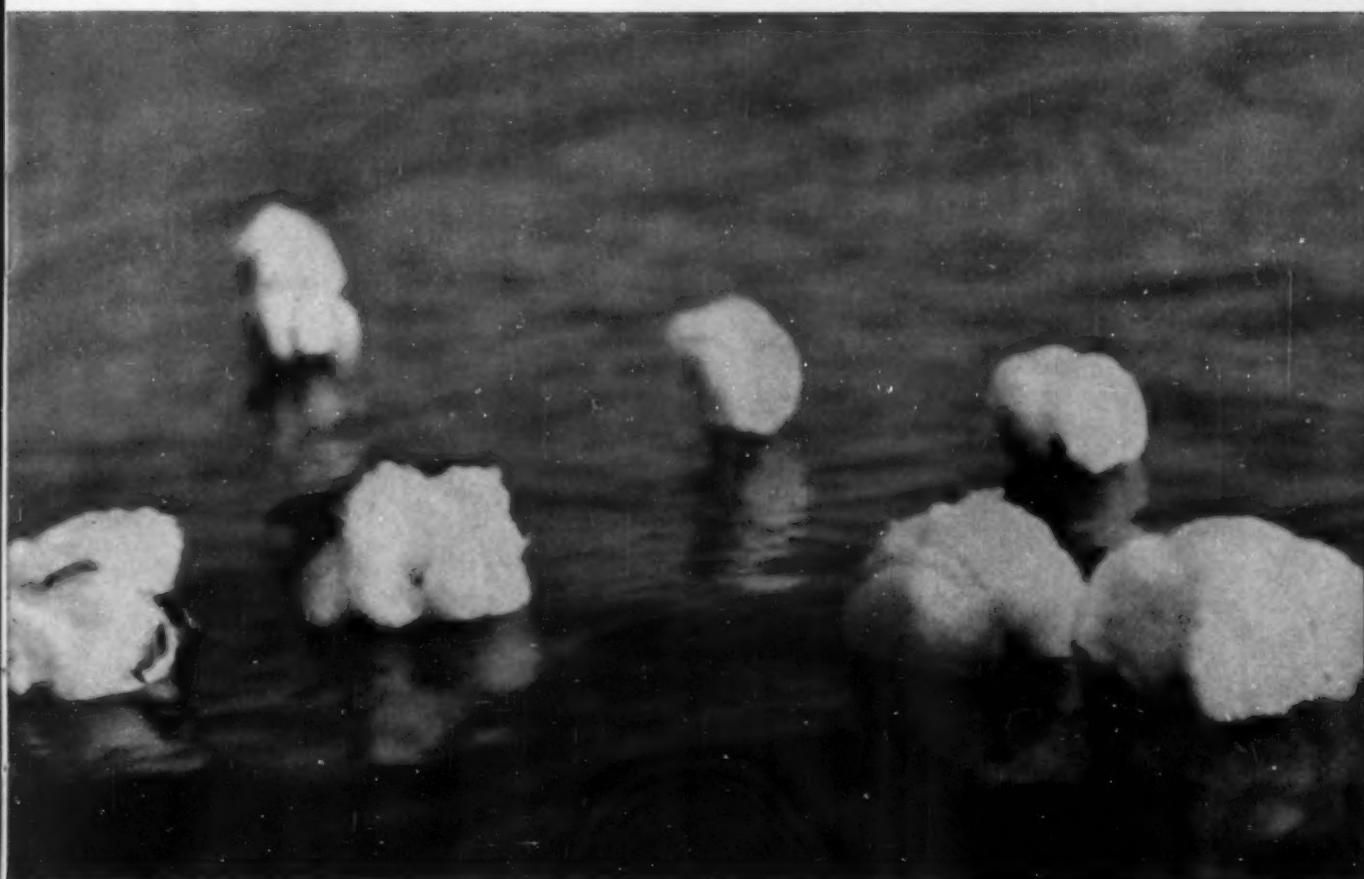
- The value of all work done on building sites during April was 8% under a year earlier. The sag was only 4% as recently as January.
- The number of new dwelling units started in both March and April was at a seasonally adjusted annual rate of about 1.1-million. That's the lowest in almost two years.

Agitation in Congress to "do something about housing" is bound to rise, particularly in an election year. Starts have been behind 1955 each month so far; the four-months' shortfall now is estimated at nearly 70,000—355,000 starts through April against 423,300 in the same period last year.

Home purchases by veterans, a dominant factor in last year's market, have fallen drastically due to down-payment requirements. (Some veterans complain, too, that lenders insist on conventional mortgages on which they earn a larger return.)

VA applications totaled 150,000 in the first four months this year against 250,000 in 1955. The decline for April alone was 31%. Moreover, resale discounts on this type of mortgage have been widening again.

When your cotton goes overseas...



...talk to the people at Chase Manhattan

**Use a world-wide network of bankers-at-the-spot
to help solve your import-export problems.**

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Whatever, or wherever your problem, you get the overseas help you need from the banker-at-the-spot... the man who has an intimate knowledge of local trade conditions and knows how to make them work for you.

This is possible because Chase Manhattan has spent many years building a close personal relationship with its foreign correspondents. Chase Manhattan and its stateside correspondents

handle the U.S. problems of the Bank's overseas correspondents. They, in turn, get things done for Chase Manhattan in their own countries. Such reciprocity enables you to get more efficient banking service in the world's markets.

Here at home, experienced men in the International Department sit down and talk things out with you personally. They work with you on a basis of individual analysis and imaginative planning. And knowing the right men in the right places, they can quickly contact the banker-at-the-spot who can best help you.

All of these facts add up to fast, efficient, friendly—and above all—

personalized service wherever in the world you trade.

If you have any import or export problem, telephone HA 2-6000 or write to International Department, The Chase Manhattan Bank, 18 Pine St., New York 15.

It will pay you to talk to the people at Chase Manhattan and their network of bankers-at-the-spot.

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CHASE
MANHATTAN
BANK**

(MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION)



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Industry's Cost-Cutting Gas

Acetylene is one of industry's most widely used gases because it does so many things so *much* faster. No other gas can compare with it for speed in cutting steel, in flame hardening steel, in scarfing, or in welding and brazing. This speed provides most realistic savings.

There are several reasons why acetylene is such a time-saving, cost-cutting gas. First, it provides the highest flame temperature. Second, it provides the most rapid heat transfer. Third, it is absolutely uniform in heating value . . . and thus in results. There is no variation from the first to the very last gas drawn from an acetylene cylinder; no variation from one cylinder to another; no variation from today's acetylene to that of a month or a year hence. Men work *surer* and faster . . . to cut both labor costs and wasted materials.

Many leading industrials use NCG Acetylene exclusively. They recognize the importance of NCG quality controls. They value the dependable supply assured by NCG's nationwide network of manufacturing plants and NCG Authorized Dealers. They respect the counsel and equipment NCG offers, both born of NCG's unequalled experience in the use of compressed gases. To be sure, you *too* should rely on NCG.

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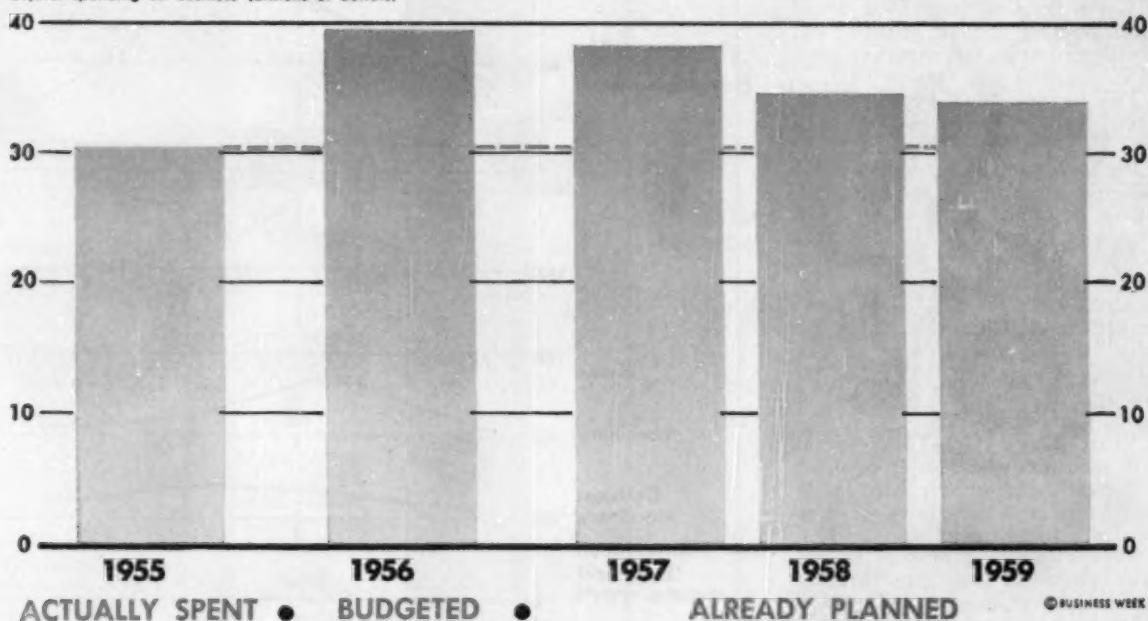
CAPITAL SPENDING

IT SET A RECORD IN 1955

THIS YEAR IT WILL JUMP 30%

AND INDUSTRY IS PLANNING FARTHER AHEAD AND BIGGER THAN EVER BEFORE

Capital spending all business (billions of dollars)



© BUSINESS WEEK

Planned for a Long Climb

Last year, business laid out an all-time record \$30-billion for capital spending. This year, it will push that up to \$39-billion. And through the next three years it promises to keep on spending heavily.

Those are the strikingly optimistic findings of the just-completed survey of business plans for new plant and equipment made by the McGraw-Hill Dept. of Economics.

This new McGraw-Hill survey—which isn't a forecast, but an objective report on what companies say they're now planning for the future—shows that:

- All business is planning to spend 30% more in 1956 than it did last year.
- Manufacturing industries, the

biggest contributor to the capital spending boom, are planning to spend 48% more this year than last.

- Companies in almost every industry have been boosting their own ideas on future spending month by month since late last year.

- Business is looking well beyond 1956, making preliminary capital spending plans for 1957, 1958, and 1959. The price tag on even these preliminary plans already exceeds 1955's old record of capital spending.

- Industry is planning to spend much more on research and development. In 1953, research spending totaled \$3.7-billion; last year, \$4.8-billion. This year, it will reach \$5.5-billion;

and by 1959, it is scheduled to run to \$6.3-billion.

- This stepped-up research spending is expected to produce a flood of new products and to spark a 24% rise in sales of goods in the next four years. By 1959, manufacturers expect to get 11% of total sales from new products—ones that didn't exist in 1955.

- New Spurt—What all this adds up to is the news that capital spending, far from flagging as some have feared, is still gathering steam. Plans have been enlarging ever since October, 1955, when the preliminary McGraw-Hill survey of capital spending for 1956 was taken (BW—Nov. 12 '55, p27). At that time, business reported it

planned to spend 13% more in 1956 than in 1955. Then, in February, the Securities & Exchange Commission and the Commerce Dept. made their joint capital spending survey. They found that business was planning to spend 22% more than in 1955 (BW-Mar.17 '56,p30). Now, the new and final McGraw-Hill survey for 1956 finds that business has raised its spending plans for this year to 30% more than 1955.

I. Growth in the Factories

Manufacturing industry puts the beef into the capital spending drive. Last October, manufacturers told McGraw-Hill they planned to spend 30% more this year than last. In February, SEC and the Commerce Dept. found them planning a 31% increase. But now they're saying they expect to spend 48% more this year than in 1955.

This increase would boost manufacturers' outlays by \$4.6-billion to a total of \$14-billion this year.

- **Big Spenders**—The non-ferrous metals industries are planning the biggest increases in capital spending for 1956. They aim to spend 123% more than last year. Among other manufacturers, the paper industry's plans call for 83% increase, steel's for 82% more, auto's for 81% more. Chemicals, rubber, and stone, clay and glass producers schedule increases of more than 40%. And the machinery industry itself is stepping up capital spending by 35%.

- **What They'll Get**—These are all basic industries where major expansion of capacity requires very large investment. And in all these cases, major expansion is already under way.

Steel is starting a program to raise basic capacity by more than 14-million tons in the next three years. Aluminum is set to increase capacity by at least 700-million lb. in the same period. The auto industry is expanding assembly capacity and its supporting plants, increasing automation of production, and preparing to spend still more to turn out new models in the fall.

II. Surge Through Industry

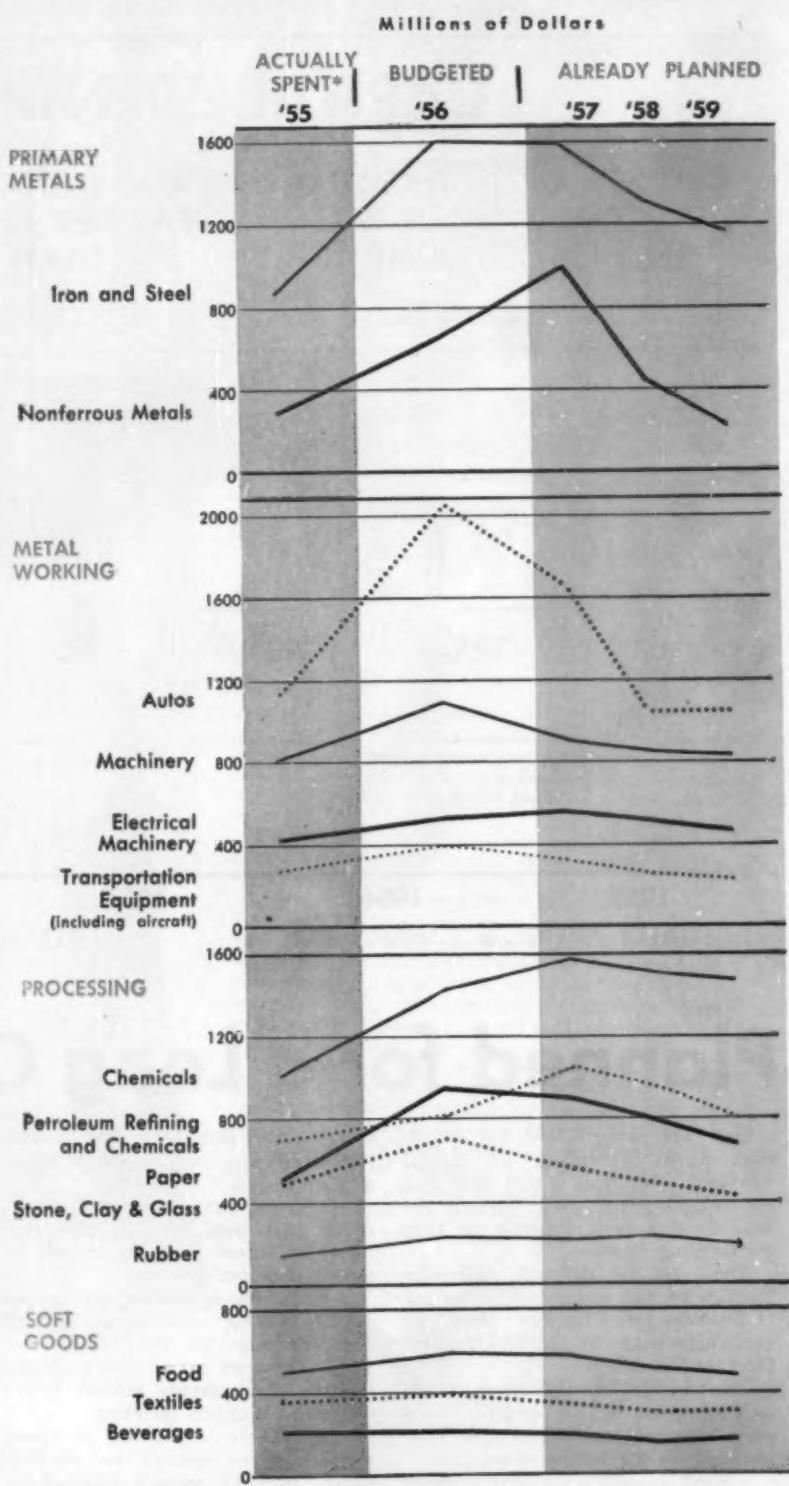
The capital spending upsurge spreads out well beyond the manufacturing industries. It's based broadly through the whole of U.S. industry.

The railroads, whose capital spending plans have varied widely from year to year, expect to spend \$1.5-billion this year—62% more than in 1955. But the steel shortage may force them to postpone some of their spending until 1957.

Other transportation and communication companies plan to spend \$4.5-billion this year—33% more than last. And their preliminary plans for 1959 are already \$500-million greater than

Throughout Industry

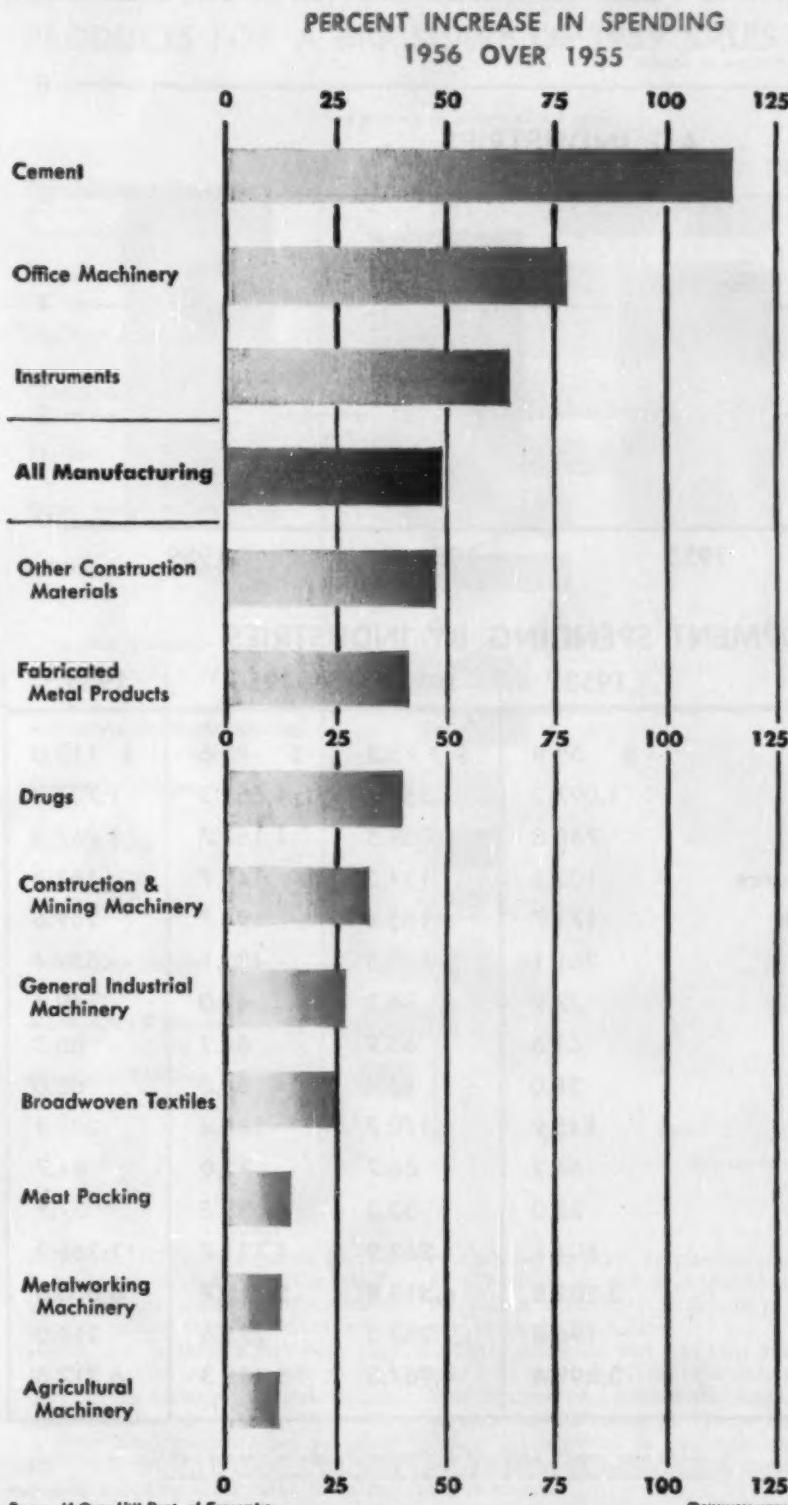
Manufacturers Are Laying Big Plans...



Source: *U.S. Department of Commerce, Securities and Exchange Commission.

McGraw-Hill Dept. of Economics.

...and Here's How It Shows Up This Year in Individual Business Lines



Source: McGraw-Hill Dept. of Economics.

those scheduled for this year. The airlines have record expansion programs mapped out for the next four years, and by 1959 large-scale deliveries of commercial jet aircraft will begin.

Electric and gas utilities plan to spend \$5-billion this year—15% more than last. Their money will go both into extra generating capacity and new transmission lines.

The mining industry plans to spend \$427-million this year—34% more than last. Coal and iron mining companies are responsible for much of this increase, and their extra effort is tied to the steel industry's expansion program.

The petroleum industry plans to spend \$5.5-billion this year—11% more than last. In 1957, it aims to raise its capital outlay to \$5.9-billion, and to keep them at that level through 1959. Most of this year's increase will go for exploration, discovery, and production of crude oil. But a steady increase in spending is scheduled, too, for new refining, transportation, and marketing facilities. (McGraw-Hill's figures on the petroleum industry don't include the industry's heavy investment abroad.)

Commercial building will hit \$8.8-billion this year, 20% more than last. New office buildings, shopping centers, and warehouses will make up much of the gain over last year.

• **Planning Ahead**—All through industry, preliminary plans are being mapped for continuing gains in capital spending for the remaining years of this decade. Advance plans for 1957 already equal expenditures budgeted for 1956. Not since McGraw-Hill began its annual surveys of capital spending have plans for the following year equaled those for the current year.

More and more companies in every industry are making long-range capital spending plans. Some 88% of the companies surveyed—the largest proportion found in any McGraw-Hill survey—were able to report on spending plans reaching four years ahead.

III. Prices' Growing Bite

Not every extra dollar's worth of capital spending this year will turn up in the form of extra plant and equipment. Some of the increase will go to pay the higher prices of capital goods. And some of the increase scheduled in business' preliminary spending plans for the next three years also has been earmarked to cover anticipated price rises.

That could be one of the reasons for the fact that the new McGraw-Hill survey shows sharp gains over the results of the SEC-Commerce Dept. survey made in February. (One example: Where McGraw-Hill finds manufacturing industries planning to spend 48% more this year than last, SEC-Commerce Dept. found an increase of

Technical Change Is Putting the Push

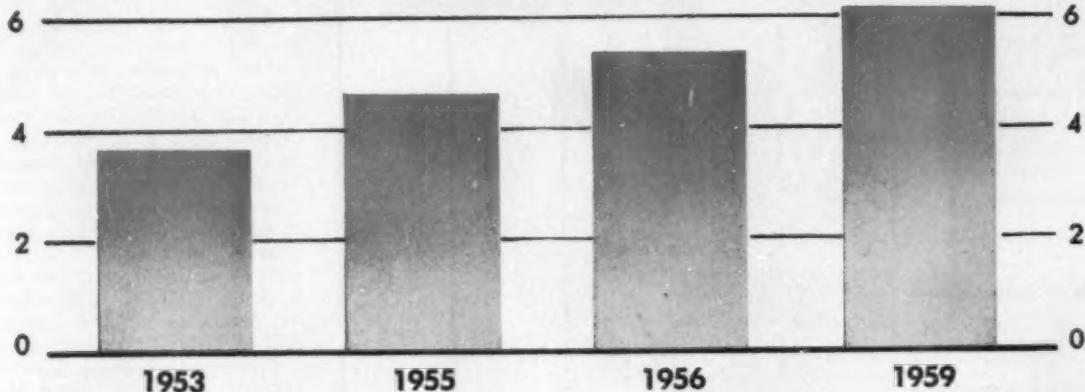
EVERYONE IS PUTTING MORE MONEY INTO RESEARCH . . .

Research and development expenditures (billions of dollars)

8

8

ALL INDUSTRIES



RESEARCH AND DEVELOPMENT SPENDING BY INDUSTRIES

(millions of dollars)

	1953* ¹	1955* ²	1956* ²	1959* ²
Primary Metals	\$ 59.8	\$ 75.3	\$ 89.6	\$ 113.0
Machinery (including electrical)	1,097.2	1,357.7	1,561.3	1,757.0
Aircraft and Parts	758.0	1,038.5	1,152.7	1,267.0
Fabricated Metal Products & Ordnance	103.3	134.3	147.7	163.8
Professional & Scientific Instruments	171.7	185.4	194.7	259.6
Chemicals and Allied Products	361.1	440.5	480.1	559.4
Paper and Allied Products	27.9	36.3	41.0	49.4
Rubber Products	53.6	65.9	69.2	86.3
Stone, Clay and Glass	38.0	46.4	54.8	65.0
Petroleum Products	145.9	170.7	184.4	201.4
Food and Kindred Products	54.2	66.7	72.0	84.7
Textile Mill Products & Apparel	28.0	32.2	33.5	37.7
Other Manufacturing* ³	604.1	863.9	1,131.7	1,356.3
ALL MANUFACTURING	3,502.8	4,513.8	5,212.7	6,000.6
Nonmanufacturing Industries	196.6	253.5	275.6	317.0
ALL INDUSTRIES	3,699.4	4,767.3	5,488.3	6,317.6

*1. National Science Foundation.

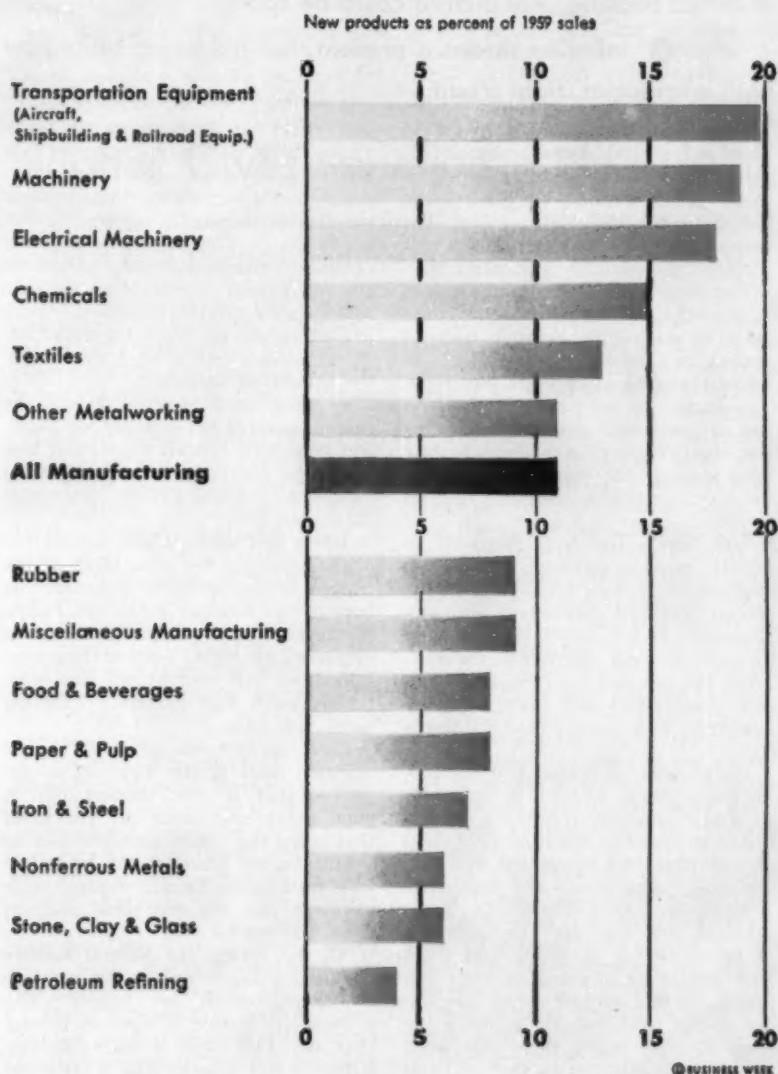
*2. McGraw-Hill Dept. of Economics.

*3. Includes auto, tobacco, lumber and wood products, furniture, printing and publishing, transportation equipment other than aircraft and auto, and miscellaneous manufacturing industries.

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Into Capital Spending

...BECAUSE INDUSTRY COUNTS ON NEW PRODUCTS FOR A BIG SHARE OF 1959 SALES



only 31%).) There's a second possible factor in the divergence: McGraw-Hill's survey includes a higher proportion of large companies than SEC-Commerce's survey, and in these tight-money days the big outfits are less likely to have difficulty in financing expansions than small companies.

- More Needed—Even when you allow for rising prices, it's still clear that capital spending must make some further sharp gains through the rest of the

year actually to reach its planned total of \$39-billion; in the final quarter of the year it would have to get up to a rate of about \$43-billion.

There are factors that may hold business back from that rate of spending. If credit stays tight, some of the planned increase may be reined in. Then, too, delays in deliveries of materials and equipment could postpone some spending this year.

- Checkrein—There's a strong hint

that this latter factor may keep business from fulfilling its plans to spend \$39-billion this year. Capital goods manufacturers say they expect their sales to rise only 15% in physical volume this year—yet business says it expects to increase its capital spending 30%.

IV. Achievement—and Beyond

Rising prices are helping push capital spending figures higher, but there's no doubt that much of the extra money that U.S. business is spending is adding fast to U.S. industrial capacity. The McGraw-Hill survey points this up clearly.

At the end of 1955, U.S. industrial capacity was 40% greater than at the end of 1950. By the end of this year, the total increase in capacity over 1950 will reach 51%. Manufacturing industries will soon have more than half again as much capacity as at the start of the Korean War.

- Keeping It Going—Two powerful forces are likely to keep this expansion rolling:

- Most industries were operating at close to 100% of capacity when this year began. But last year's McGraw-Hill survey found that most industries prefer to operate at less than 90% of capacity (BW-Nov. 12 '55, p27). Manufacturers expect a 24% sales rise between now and 1959. So, if they're to increase capacity to take care of that sales rise, and get their plants down to their preferred operating rate, they'll have to increase capacity much more than 24% in the next three years. Their preliminary plans call for a 26% increase in capacity in that period, but even that may turn out to be too little.

- The conviction is spreading through U.S. industry that money spent for research and development can bring in the biggest returns. Increasingly, the quest for new markets and new business growth is becoming a search for new products.

V. Force for the Future

For the first time, the McGraw-Hill survey questioned companies about their plans for research and development spending, asked what proportion of future sales they expected would consist of new products—that is, products that didn't exist last year or ones that manufacturers thought would be sufficiently changed to qualify as new products.

From their answers, it's clear that practically every industry is getting deeper and deeper into research.

- Expectations—In operations where product development is planned well in advance—such as aviation products, instruments, construction machinery, office machinery—manufacturers expect

more than 20% of their 1959 sales will be made up of new products. The chemical industry thinks 15% of its 1959 sales will be in new products; the electrical machinery industry, 18%.

In some parts of the chemical industry, it's hard to tell what the lab researchers will come up with. In some other industries such as apparel, packaged foods, drugs, and tobacco, style trends that are usually unmeasurable in advance can affect new product plans. So developments that cannot be foreseen could raise the 11% share of business sales that new products are expected to hold in 1959.

More than 25% of all manufacturing companies surveyed told McGraw-Hill that a significant share of their 1956 capital spending will go into facilities to make new products. That share seems bound to rise as sales of new products and spending on research move forward in a chicken-and-egg relationship.

• **Growing Share**—The new wave of business research spending is far from reaching its crest. It jumped 33% from 1953 to 1955. But by 1959, research spending is scheduled to rise another 33%. That last figure is based only on business' preliminary plans; by 1959, the actual figure may be much higher.

The wider industrial emphasis on research is pressing this sector of capital spending higher. Last year, the chemical, aircraft, and electrical machinery industries spent most on research. Just behind them were the oil industry, fabricated metal producers, and instrument makers. But through the next three years, the largest growth in research spending is planned by industries that haven't yet concentrated so deeply on this field: the primary metal, non-electrical machinery, and automobile industries. The opening of General Motors' new research center helps dramatize this trend (BW—May 12 '56, p102).

Plainly, research is becoming one of the biggest factors behind the heavy and increasing rate of business capital spending.

The impact of rapid technical change goes far beyond the sums of money spent directly for research or for plant and equipment to make new products. Rapid technical progress also steps up the rate of obsolescence of old plant and equipment, and so accelerates the pace of total business investment.

The faster rate of business investment—which involves larger payments to workers, technicians, and producers throughout the economy—thus raises total demand; and that reacts on business spending for expansion. This process may not function perfectly; parts of it sometimes get out of phase. But it's the process that, over time, keeps America growing.

Push on the Up Side

● Business in general is almost bound to be propped up by huge capital spending.

● The projected expansion should cancel out softness in autos, housing. But picture could be spotty.

● Inflation threat is present, but it's being reined by high inventories, tight credit.

Even a quick look at industry's 1956 plans for capital spending (page 23) makes one thing clear: Barring a credit crisis, business in general can scarcely help being good this year. The massive expansion program that is now shaping up practically guarantees that.

Just how good isn't quite so clear. Apparently the U.S. economy once again is staging its postwar trick of making a "rolling readjustment" to forces that pull in opposite directions. The leaders of last year's boom—autos and housing—are definitely dragging this year. Without something to take their place at the head of the parade, the economy might have been due for trouble.

• **Soft Spots**—The huge upthrust in capital spending promises to head off anything more than a mild dip in the general levels of production and employment. But it won't by itself cure the ills of each individual industry. Thus, the prospect for 1956 is a boom with some notable soft spots, a general prosperity with some important absences.

It's possible, of course, that the rolling readjustment will roll us right into a round of inflation. If business is determined to spend as much as \$39-billion on new plant and equipment this year, the strain on materials and manpower in particular lines will be terrific. Some prices are sure to go up. The undertone of prices already is strong and there have been a lot of small increases this spring. If this summer's wage bargaining in the steel industry forces a big jump in steel prices, there may be a rush of price hikes on all sorts of hardgoods.

On the whole, though, the stage doesn't seem to be set for any broad inflation. Like any other big spending program, capital expansion gives a lift to incomes and thereby swells the aggregate demand of consumers, but this is a long-run effect. In the short run, the immediate impact is concentrated in a fairly limited area of the economy—and it happens that this is precisely the area where the slump in autos and housing is most likely to create a little slack.

Capital spending won't have any di-

rect effect on farm prices—the most glaring weak spot in the economy just now. And it won't make much difference to the industries that produce nondurable consumer goods—textiles, for instance. The biggest beneficiaries of industry's expansion program will be the equipment makers—the machine tool industry, electrical machinery manufacturers, and the like—and, indirectly, the industries, such as steel, that supply the equipment makers.

In these areas you can expect the upward trend of prices to pick up speed. But even here, nobody knows just how much the effects of the big industrial expansion program already have made themselves felt.

• **Effect of Credit**—When you are trying to figure out the price effects of the current capital spending program, you have to take account of two other facts: (1) Inventories are high; (2) credit is excruciatingly tight. Both of these considerations will tend to pull any inflationary teeth that industry's spending plans may have.

Credit, in fact, emerges as the biggest question mark in the whole economic picture that is now shaping up. A good many economists are convinced that unless the money managers ease up a little on the brakes it will be impossible for business to carry through with anything like the expansion program it has laid out for itself.

All this spring, the Federal Reserve has been trying to rein in the economy by letting credit get tighter. The squeeze on money is now so painful that the Fed faces a real dilemma: Either it will have to relax a little and let the money supply expand enough to encourage economic growth; or it will have to risk widespread cancellation of business expansion plans. One way it takes a chance on a certain amount of inflation. The other way it takes a chance on collapsing the whole business boom.

• **The Possible**—Even if the Fed relaxes, capital spending this year may fall short of the \$39-billion total that is now programmed. There's a real question whether spending can be stepped up fast enough to hit that target by the end of the year. And there's

also a question as to whether or not materials and manpower will be available to build that much in the way of new plant and equipment. A capital spending program of \$39-billion would represent close to 10% of the country's present output of goods and services. That's a higher proportion than we have spent in any year of the whole postwar boom.

All this means that if business gets a chance to follow through on its plans, capital spending will be giving a lift to the economy for years to come (page

204). The U.S. is cashing in on a process whereby growth generates more growth. If there is an end to this process somewhere, you can't see it in the plans that industry is now laying out.

As things look now, though, anything that is not spent in 1956 will carry over into the following year. For the \$39-billion program is not a flash in the pan; it is part of a long-run expansion that stretches on into the 1960s. Already spending for 1957 is programmed at about the same level as this year.

Hughes Gives Aviation a New Jolt

**His plans for jet airliner have industry wondering:
Could it beat Douglas' and Boeing's?**

Trans World Airlines kept the aviation industry guessing for months this winter when it delayed in ordering jets. Now it has given airlines and manufacturers something even more intriguing to chew on.

Late last week, it petitioned the Civil Aeronautics Board for permission to buy 25 jets from Howard Hughes.

Permission is needed because Hughes, through his Hughes Tool Co., owns 74.2% of TWA's stock. When Hughes Tool asked the CAB in 1944 for permission to acquire control of TWA, it was granted, subject to certain conditions. One of these was that transactions between the airline and the manufacturing company would not exceed \$200 per deal, nor a total of \$10,000 a year.

• **Dynamite**—The effect of the latest request could hardly be more explosive.

It comes after many of the world's airlines have committed themselves to buy over \$1-billion worth of 550-mph. jets from Douglas Aircraft Co. and Boeing Airplane Co. The question bothering airlines and manufacturers now is: Does Hughes have a design for a plane that will render obsolete the Douglas and Boeing jets?

The TWA petition gave few clues, but did say that important new jet aircraft developments "make it possible to design aircraft at this time that are superior in performance, safety, and economy to the commercial aircraft now being constructed, the designs for which were laid down four or five years ago."

• **Own Project**—At the moment, Hughes doesn't have manufacturing facilities to build commercial jets. But if CAB grants TWA's request it's expected that he will build in Florida.

Hughes will have to build the plane himself, says Gen. Ira Eaker, vice-president of Hughes Tool Co. The cost of jet transports today is so high that no manufacturer feels he can build one

unless he has orders for at least 100 planes, Eaker says. "Maybe manufacturers would have taken this on five years ago when they thought they could build a jet for \$800,000. But the price for our kind of jet today is \$8-million."

• **Schedule**—TWA, in its petition to the CAB, says it expects deliveries of the Hughes jet to begin in 1961. That's about two years after airlines receive the first Boeing jets and a little more than a year after they get the first Douglas jets.

The industry thinks Hughes would not build a factory to turn out only 25 jets for TWA. Also, Hughes has said he'll be willing to sell his planes to any airline at the same price TWA will pay. And so the aviation industry is coming to the conclusion that Hughes is confident his jets will have wide appeal.

• **Doubters**—But some in the industry say it would be almost physically impossible for him to start from scratch on such a project and be producing planes by 1961.

The TWA petition gives a hint of what Hughes apparently expects from his plane when it declares that none of the jet airliners now offered for sale "has the range desirable for all-year operations across the Atlantic so as to permit nonstop services in both directions under extreme conditions."

Boeing and Douglas deny that this is so. Says Boeing, "Specifications for the Intercontinental jet transport are that it will suffer a loss of only 5% of payload under the worst winter conditions in flying nonstop from Paris to New York."

• **Guesses**—Meanwhile, there's plenty of speculation about the plane's design. Some think Hughes must have in mind a high-lift device that would enable his plane to take off with greater loads than competitive commercial jets could carry.

One speculation that, if true, would completely upset aviation's applecart is that Hughes might be ready to build a transonic commercial airliner.

Ford Diversifies

Acquisition of Systems Research gives auto maker a springboard to electronics and allied fields.

Last week, for the first time since the days of its founder, Henry Ford I, Ford Motor Co. bought its way into a new industry—and one with almost unlimited opportunities to diversify.

In the old days, the company owned farms, forests, mines; even a railroad. To turn around a company that was losing money at a fearful rate, Henry Ford II and Chmn. Ernest R. Breech after the war began sloughing off the company's side interests to get the big company on a profit basis from its auto business alone. (It has been in the tractor business for many years, and like all large companies, has been doing defense work.)

• **Starter**—For some time, it has been apparent that Ford now has the capital and the desire to diversify and expand in order to grow. Last week's purchase was the opening bid.

Ford formed a subsidiary, Aerotonutronics Systems, Inc., to absorb Systems Research Corp., an organization of scientists headed by Dr. Ernst H. Krause who quit Lockheed Aircraft Corp. in a management dispute (BW-Dec. 24'55,p90). According to Breech, the new company "will design, develop, and manufacture weapons systems for the military and related systems for commercial application."

• **Owner**—Ford owns 75% of Aerotonutronics stock, with the remainder set aside for present and future "key technical personnel." Ford is investing \$10-million initially, and \$4-million later on to get research and development work started. Aerotonutronics will build a research lab in California, probably near Los Angeles, which when fully occupied some time in 1958 will house between 1,000 and 2,000 people. Employment now is only 30.

Breech possibly tipped off Ford's long-range reason for the new company when he said, "Technology is expanding in the new fields of electronics, nucleonics and aerodynamics . . . We believe there are limitless applications for an automotive company such as Ford to pursue in these areas."

• **Who's Who**—Aerotonutronic's president is Gerald J. Lynch, with Dr. Krause as vice-president (research and development). Lynch was director of Ford's Office of Defense Products & Governmental Relations, and one of his assignments was to look for likely opportunities for the company's expansion.

Showcase for Living, staged by the International Home Exposition, opened with a flourish at the New York Coliseum this week. Its mission: To foster the yen for an ultra-modern nest.



ELECTRONIC oven is a popular display. Price: \$1,100.

Builders

THE HOMEBUILDING INDUSTRY is finally taking a cue from the auto industry and putting the emphasis on styling and merchandising.

You could see signs of this at this week's International Home Exposition, Showcase for Living, held at the New York Coliseum—a show that may become to the housing industry what the annual automobile show is to Detroit.

At the Coliseum, crowds got a tantalizing glimpse of the house of tomorrow. Judging by the four-floor show, it will be machine-made with a custom look. It will be more colorful, more flexible, and less trouble. And it will come in sections—meaning that all or part of it can be traded in for a newer model.

- Right Track—If the spectators' interest is any indication, the industry is off on the right track.

For 10 postwar years, the builders concentrated on putting up roofs—cheap and fast—for the backlog of families that needed a place to live. But with that backlog taken care of and with fewer families being formed, the home builders are having to rustle up a new market. So they're making their pitch to the family that owns a house—maybe even a fairly new one—by creating the desire for a better home. Like the auto makers, the home builders are trying to foster "planned obsolescence."

- Potential—As a first step in its program, the building and construction materials industries set out to determine what today's families want in a home. Market research and buyer testing showed an overwhelming yen for radical changes in the style of houses. In one survey, two-thirds of the poten-



KITCHENS have better arrangements, made possible by more interchangeability of parts.



APPLIANCE WALL is a complete unit, but components can be inserted or taken out.

Take a Tip From Auto Makers

tial buyers preferred modern designs. By contrast, few liked the fairly conservative designs that most builders have been working from in recent years.

The surveys also showed an all-time-high dissatisfaction with existing housing. About 40% of middle-income-bracket families wanted to move from their present abodes—mostly because they're too small, but partly because they lack the more modern look.

• **Starter**—Armed with these statistics, the industry is out to capitalize on this urge to move. While this week's show at the Coliseum was just the starting gong, it indicated how far the home builders may find themselves going.

Spotlighted at the show were four prefab houses, all with the low-lying lines of the "California contemporary" or "ranch western." They featured kitchens with plenty of built-ins and plenty of color. Terraces, recreation rooms, fireplaces, solar walls, were some of the added touches. Everywhere you could see the brighter colors. There were the more flexible mix-or-match appliances and the varieties of wall surfaces offered by the new plywoods, papers, and wall boards.

Some of the homes showed walk-in closets that can double as a dressing room, with the clothes tucked away behind sliding door panels and in nests of built-in drawers. Fabricators, Inc., for instance, exhibited prefab panels and units that can be combined with conventional construction at the time of building, or added to an old house to give it a more up-to-date appearance.

Most of the prefabricators sell only

whole units, but Fabricators, Inc., will sell you as much or as little as you want.

The appliance makers took a dominant role with their wares—including stoves and refrigerators that are built into walls. General Electric was chief sponsor of the Wonder Home; GE took half the first floor to demonstrate its appliances. One of the biggest eye-catchers was the new electronic oven demonstrated by manufacturers such as Hotpoint, Tappan, and General Electric.

• **Second Market**—The show also indicated that the builders have a weather eye on the family that can't afford an all-new home. Even with the easier credit terms—and the industry is pushing for those—many will have to get along with the old house for a while, at least. But many of these families can be sold on the idea of modernizing their present homes through new fixtures and materials. According to suppliers of building materials, for every dollar going into new residential construction, there is another dollar going into maintenance and repairs. By stressing style in houses, the builders hope to make this sort of spending more popular—and even necessary.

• **New Industry**—Looking ahead, some observers think that styling and merchandising will mean basic changes in the structure of the building industry itself.

One big development in recent years is the rise of the large home-building organization—one that puts up 25 to 250 homes per year. This type of builder is big enough to do some market

research and styling, and to introduce new methods and materials.

At the same time, producers of consumer durables—such as General Electric and General Motors—are getting more interested in housing. The appliance companies now make units that are built into walls. They expect to sell complete all-round heating and air-conditioning units for most homes built in the 1960s. Some even hint that eventually they may build prefabricated walls, or entire rooms, with the basic appliances built in.

• **Long Range**—Makers of building materials, says Armstrong Cork Co.'s economist Walter Hoadley, must watch the swing toward integrated production of these interior units and figure that someday the appliance companies will be big customers for such products as insulation, wiring, paint, and acoustical materials.

These trends are likely to accelerate as home building reaches the stage of mass production and mass distribution. Some economists think that new housing starts may hit 2-million in the late 1960s. At this rate, large-scale prefabrication of interior units would pay—both for the home builder and the appliance maker. Then, the householder may be able to trade in a room just as he would a car, if the new models look more interesting. And there'll be national brand advertising to see that they do.

The show at the Coliseum doesn't go that far. But you had only to look at the way people were shopping to realize that housing may be the next great consumer durables industry.

HOLD PRICES →

says Chmn. Roger M. Blough of United States Steel Corp. (right). His company, bellwether of the industry, plans to hold the price line until a new labor contract has been signed.



RAISE PRICES ↓

say most other steel executives (below). They want U. S. Steel to lead the way in a price rise now—to boost retained earnings for financing expansion—regardless of the outcome of wage negotiations.



Ernest T. Weir, National Steel



Avery C. Adams, Pittsburgh Steel



Charles M. White, Republic Steel

Steel's Family Fight

Two of steel's elder statesmen, Chmn. Ernest T. Weir of National Steel Corp. (above, left), and Chmn. Roger M. Blough of United States Steel Corp. (above), have been disagreeing vigorously the last few weeks.

The issue they're disputing so passionately is the steel industry's price policy (BW-Apr. 28'56, p28). Weir says prices must go up now—to help finance expansion. Blough says they're not going up now.

Weir is 30 years older, but Blough's property is 33-million tons larger in annual capacity, accounting for 31% of the nation's total tonnage. So prices aren't going up until steel signs its new labor contract this summer (BW-May 12'56, p28).

But what's really at issue isn't prices at all—it's depreciation. And, ironically, if you searched the country over, you couldn't find two industrialists whose views on that subject are any closer than Weir's and Blough's. Steel's intra-family fight over a price increase now, regardless of a labor settlement, is as simple as that—and as incongruous.

The dispute is over tactics. Big steel would solve the problem of financing new plant by changing the tax law. The smaller companies don't want to wait for legislation that may never come.

• The Word—For at least six months,

most steelmen had been plugging for a price increase to improve their earnings and allow them to retain enough to help pay for the ever more costly expansion of their plants. But U. S. Steel wouldn't bite, and nobody else was big enough to make a price boost stick. Then, a week ago, Blough indicated clearly that there would be no increase until the wage issue is settled. The answer to the problem of financing expansion, he insisted, lies in getting the depreciation rules revised, not in a general price increase to enlarge profits.

This leaves U. S. Steel in a paradoxical position:

- Its refusal to go along with a general price boost now may prove to be the industry's most valuable weapon if Congress goes ahead with an investigation of steel's wage-price policies (BW-May 12'56, p27). U. S. Steel, inevitably the industry's chief spokesman, would find a friendly forum in a committee opposed to price rises.

- Within its own industry, it finds itself on the short end of opinion among major producers. Only Bethlehem Steel Co. has lined up with Blough; the next five producers—Republic, Jones & Laughlin, National, Youngstown Sheet & Tube, and Inland—have gone on record for price rise.

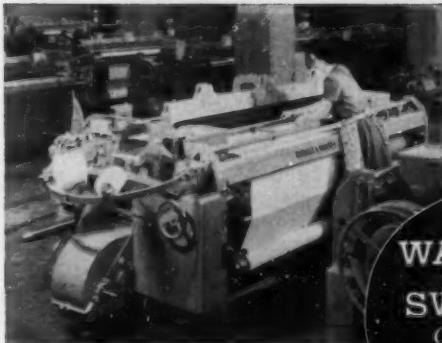
- Family Discord—if you put stock in



Voting booth—U.S.A.

EVERY American votes every day—every purchase he makes is a vote for the *value* of the product he or she buys. And value can only come from machines well used . . . somewhere in the background of every product are machines. The better the machine and the better it is used, the greater value in the product it makes or helps make. And America's *vote* goes to the top value.

Second-rate value becomes an also-ran—no votes, no sales—and soon no jobs in its factories.



Quality worsteds being woven
on Warner & Swasey



scuttlebutt around the industry, the split over the price boost is even more one-sided than that. Among the smaller producers, it's hard to find any who admit to any sympathy at all with Big Steel's view.

"Everybody wants an increase," says one company president, "but some are more vocal about it than others."

So pronounced and bitter a split could somewhat undermine U.S. Steel's position in the collective bargaining sessions that will start soon with the United Steelworkers. Many smaller producers have been unhappy anyway about recent settlements negotiated by U.S. Steel's industrial relations vice-president, John Stephens.

That was particularly true in 1954 when, in the face of a falling operating rate, Big Steel set the pattern with an 8¢ wage boost. Some people regarded this concession as an attempt to build up the stature of David J. McDonald, the Steelworkers' new president. Again, last year, some thought the 15¢ settlement by the Corporation was higher than need be.

U.S. Steel, some producers grumble, is over-free with their money at the bargaining table and over-close with it on the price lists.

I. Union Strategy

Significantly, just the opposite view is held within the steel union. McDonald's bargaining has been criticized as "too soft," designed to endear him personally to the industry rather than to push wage demands as hard as he could.

McDonald's tactics of dealing with the industry have also been under fire. There is real sentiment within his organization for "splitting the opposition," for striking only part of the industry if it comes to a walkout. This idea grows from a desire to stop making every major steel industry labor dispute a "national emergency" and thus focusing public opprobrium and covert government pressures on the union and its leaders.

Calculated Risk—Balancing this consideration is the political reality that faces the union's top governing board. For example, any regional director fears the possibility of opposition that might develop if part of the membership in his region is working and part is on strike. However, other unions have faced similar problems and solved them in one way or another.

Thus, if the industry's cleavage over price policy runs deep enough to give the union the impression that the companies won't stand together in a strike or a lockout, McDonald may try to run a kind of strike the industry hasn't seen since 1937. In that year, U.S. Steel and a few smaller companies worked,

while Bethlehem, Republic, Youngstown, and Inland were struck.

The combination wouldn't be the same this year. Most likely, U.S. Steel and Bethlehem would be on one side, and all the rest on the other. Which companies would be struck would not be decided until close to the June 30 deadline.

II. Rallying Points

While the industry may be split at the moment, there are reasons to expect the bitterness to heal when the labor chips are down. For instance:

- The industry will want to stand shoulder-to-shoulder if the Joint Congressional Committee on the Economic Report starts investigating. It sees a chance to make a forceful case for more liberal depreciation rules.

- Most producers, however grudgingly, would probably rather back up U.S. Steel in the labor negotiations than be left to their own devices.

- Before many moons, prices will be increased anyhow. Of course, the boost will be necessary to cover direct and indirect labor costs, but if the U.S.W. package doesn't run too high, producers hope there'll be a little cushion on retained earnings.

- Finally, and most important, steelmen are unanimous in feeling that over the long run solution of the depreciation problem would be the real answer. They would swallow any short-term disagreement to get that result.

III. Depreciation Rules

For years, U.S. Steel has been conducting a calm, high-level campaign to point out the financial plight of the industry. Its central point has been the argument that existing depreciation allowances are inadequate. A general price rise now to boost profits for financing expansion might have weakened that argument.

- **Cost Inflation**—Blough told his annual meeting last week that an open-hearth shop that cost \$10-million in 1930 would cost \$64-million to replace today. Depreciation write-offs would provide only the \$10-million; the rest would have to come out of net. It would amount to the after-tax profit on one-seventh of the company's total sales in its biggest year in history.

Blough said U.S. Steel needs \$500-million a year for plant. Last year, normal depreciation yielded \$140-million; reinvested profits, \$220-million, and accelerated amortization, another \$145-million. Three years from now, though, fast write-offs will be used up. Thereafter, the company will still need \$350-million a year for replacement alone, but it will have only the \$140-million of normal depreciation.

"A substantial part of our profits are not real profits," said Blough, they "are phantom profits, destined for replacements, which are eaten up by inflation almost before we get them. They cannot finance progress. We must use them just to stand still."

- **Steel's Goal**—Steel is adding to plant so fast these days—and will continue to do so for so long a time—that a really fast write-off would yield enough cash for the equally necessary replacement of existing plant. If it had the right to thus accelerate its depreciation write-off, the industry could then raise enough from retained earnings and from the sale of securities to the public to pay for further expansion of its capacity.

Steel realizes as a matter of political fact that it can't expect permission to write off for, say, \$200 the equipment it bought for, say, \$50. It would be glad to settle for a depreciation law that would let it write off as fast as possible—and distinctly faster than present law permits—the cost of the new plant it's installing every day.

Ohio Ruling Gives SUB Knockout Blow in State

Supplemental unemployment benefit plans, which have had some punishing blows in Ohio, got a knockout punch this week as far as that state is concerned. James R. Tichenor, administrator of the Ohio Bureau of Unemployment Compensation, ruled that SUB benefits can't be paid on top of state jobless pay, as the plans provide. Virginia and Oregon have similar rulings.

The ruling affects only Ohio. Enough states have approved integration of SUB with jobless pay to put over-all SUB plans in effect as scheduled.

Tichenor said SUB payments must be counted as "remuneration" under an Ohio law requiring that any remuneration by an employer to an employee must be deducted from state unemployment benefits. His ruling was in response to an inquiry from Ford Motor Co. United Auto Workers officials estimate that most of UAW's 160,000 members in Ohio are covered by SUB plans.

Though other states have ruled favorably, Tichenor pointed out that none of these has Ohio's "legislative history" on the question. He referred to an unsuccessful union effort to have the legislature amend the law, and defeat of a CIO-initiated bill at the polls last November.

A legislative committee now studying SUB won't report until next year.

It's not clear yet whether the union will seek a court test of the ruling, or try for legislation at a special session already called on taxes.

Coated nylon—versatile, new protective fabric means greater long-run economy in many jobs



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Coated nylon covers are *waterproof*—not just water-repellent—and longer-lasting. Because coated nylon is tougher, won't rot and is unaffected by mildew, it lasts two to three times as long as ordinary protective fabric.

Coated nylon covers are lighter . . . $\frac{1}{2}$ to $\frac{1}{4}$ the weight of ordinary covers . . . and easier to handle—stay flexible even at sub-zero temperatures. They are easy to repair, too.

Find out how this versatile new protective fabric can save you money. Ask your regular fabricator or fabric supplier for complete information, or write: E. I. du Pont de Nemours & Company (Inc.), (BW-5), 2494 Nemours Building, Wilmington 98, Delaware.

ADVANTAGES OF COATED NYLON COVERS:

- Waterproof
- Longer-lasting
- Resistant to rot and mildew
- Easier-handling
- Easier to repair

COATED COVERS OF DU PONT NYLON

Du Pont makes fibers, not the fabrics or covers shown here.



REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

In Business

Detroit Resigned to Auto Slump; Curtice Blasts Fed Credit Policy

Detroit this week took note of the "rolling recession" in autos, and just about wiped off the possibility of a sales pickup later in the spring. The pulling in of horns is notable; one big company has passed the word to cut down long distance phone calls. Other companies are not renewing expired commitments for advertising and promotion. But there is no evidence of reduced plans for capital spending.

Harlow H. Curtice, president of General Motors, struck a keynote when he made a drastic downward revision in his forecast of passenger car retail deliveries: to 5.8-million, from the 6.5-million he foresaw in January. (The actual 1955 figure was 7.4-million.) A direct result, said Curtice, would be a further layoff of GM hourly workers this week.

The GM president coupled his gloomy prediction with another blast at the Federal Reserve Board's tightened credit policy. Restrictive credit, he said, is one of two factors that have caused the auto market to plummet. The other is "a great deal of publicity about revolutionary models in 1957 and that these cars will be introduced earlier than last year." Neither is true, Curtice said.

Hertz Buying Car Rental Outlets As Robie of Avis Returns to Fold

Richard S. Robie of Boston is returning after a year to the fold of Hertz Corp., leading lessor of vehicles. Hertz says it is dickering to buy the properties controlled by Robie, who left Hertz last year and bought control of the Avis rent-a-car network. Robie now gets an executive job in the Hertz organization.

No one is discussing details of the deal, but Avis has about 900 car rental outlets, of which Hertz is buying some 80, which comprised the original Robie empire in New England. The remaining Avis dealers, most of whom own franchises, are expected to band together and take over the Avis company, which is little more than a name, plus promotional facilities.

Congress Group Weighs U.S. Aid In Insuring Atomic Power Plants

Atomic generation of electricity is within reach of U.S. industry, but one giant problem remains: How to insure the risks, great or small, of such operations.

This week, the Joint Congressional Committee on Atomic Energy began looking for a solution—probably

some sort of federal insurance beyond what the private insurance industry feels it can offer.

Witnesses from industry and the Atomic Energy Commission agreed on the need for federal assistance. Lewis Strauss, chairman of AEC, wants the government to underwrite all risks that the industry will not assume. But Sen. Clinton P. Anderson, committee chairman, and most of his group balked at a blank check insurance bill. They talked up limited federal participation—something like \$500-million U.S. liability in any single accident.

All hands minimized the risk of catastrophe, but all agreed that adequate insurance is essential. H. R. Searing, chairman of Consolidated Edison Co., pointed out that his company was rushing its reactor in Westchester County, N. Y., confident that insurance would be available when needed, about 1960. If it's not available, Searing said, he feels the reactor will be left idle.

Weir and Moreell Protest

Heavy Exports of U.S. Scrap

Two top steelmen this week told Congress it is "absurd and dangerous" to permit the current large-scale exports of iron and steel scrap.

In a joint letter, E. T. Weir of National Steel Corp. and Ben Moreell of Jones & Laughlin, wrote that about 25-million tons of iron ore will have to be imported this year, while 5-million tons of scrap—the equivalent of 9-million tons of ore—were allowed out of the country last year. The letter added:

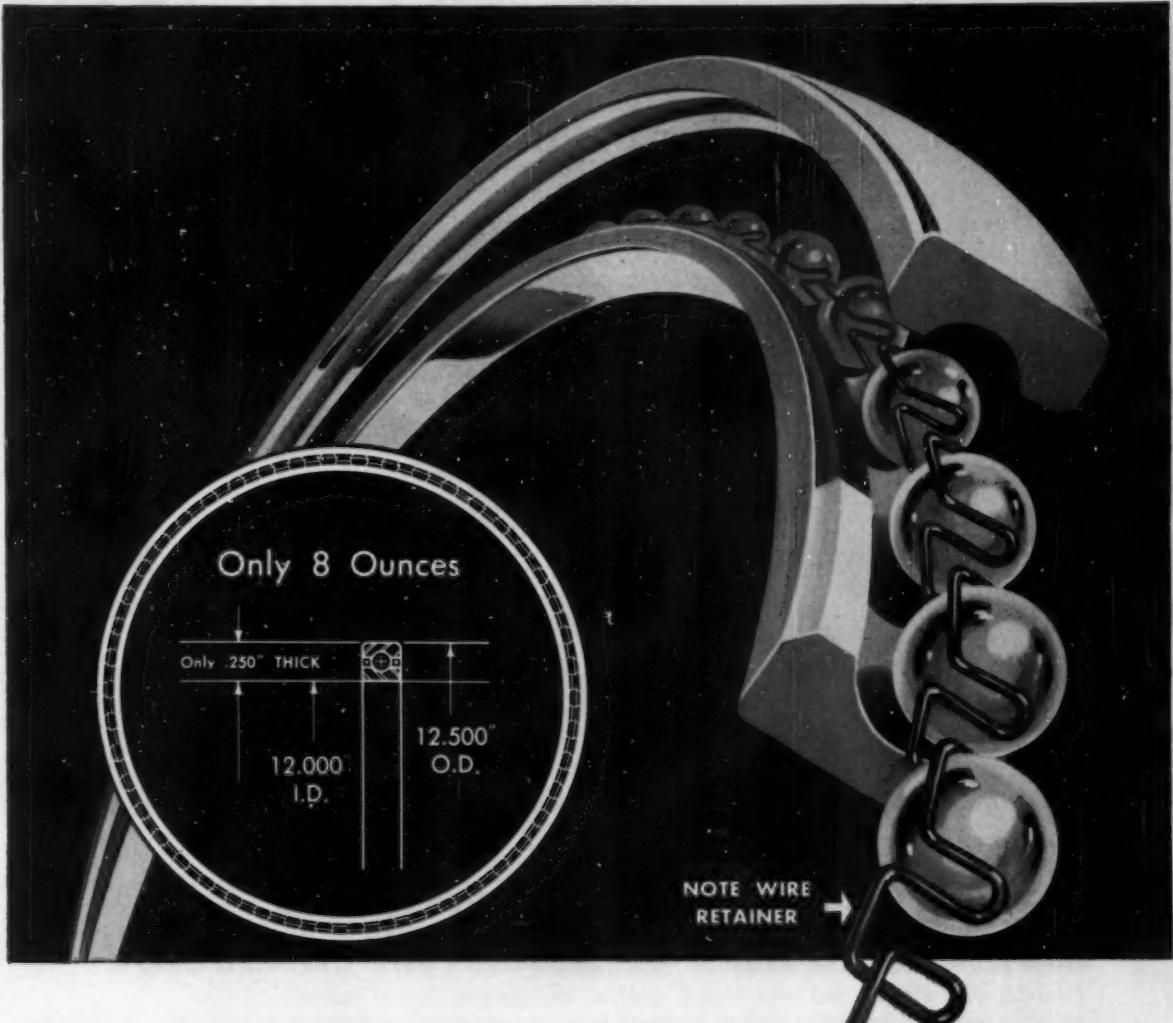
"It certainly seems pointless for steel companies to bring iron ore from foreign sources developed at enormous expense when incoming ore boats are being passed by shiploads of scrap on the way out—and with each ton of outgoing scrap neutralizing about two tons of incoming ore."

Business Briefs

Feeling expansive (page 23). In the next five years Alcoa will need \$600-million for capital spending. Up to \$150-million may be borrowed, the company says. . . . Kroger Co. food chain has a four-year, \$40-million expansion program in Detroit and southeastern Michigan. . . . Warren Foundry & Pipe Corp. intends to spend \$37-million on new iron ore capacity in the next three years.

Courtships . . . : Working control of Warner Bros. Pictures, Inc., has been bought from the Warner family by investors headed by Serge Semenenko, of Boston. . . . Rapid Electrotypes Co. of Cincinnati says it is paying a bit under \$4.8-million for almost half the stock of American Colortype Co.

. . . And Divorces. Textile operations of Textron American, Inc., will be spun off—on a tax-free basis—to form an independent enterprise, if stockholders approve and Internal Revenue Service gives a favorable tax ruling. . . . SEC has approved plans of Union Electric Co. of Missouri to spin off its stock interest in Hevi Duty Electric Co., of Milwaukee.



Save weight and space with world's thinnest radial ball bearings—*Reali-Slim* by Kaydon

HERE it is! A *Reali-Slim* radial ball bearing with a wire separator that has just short of a full complement of balls for maximum capacity. What's more, you still get all the advantages of a separator between the balls. This design also gives you a bearing that's light-in-weight and is, without a question, the thinnest bearing ever built in this diameter.

Whatever your product design, there's a small or large diameter *Reali-Slim* bearing that can be the right answer to your thin-section bearing problems.

The radial ball bearing, illustrated here, is really slim — 12.000" I.D., 12.500" O.D., .250" thick . . . and weighs only

eight ounces. It has 9,810 lbs. static load capacity, 1,256 lbs. at 100 rpm. Kaydon is able to produce *Reali-Slim*, high-precision bearings because Kaydon specializes in the unusual.

Kaydon bearing engineers are prepared to give you valuable help with technical, thin-section bearing problems.

For detailed information on Kaydon's *Reali-Slim* line, ask for engineering catalog No. 54-RS3 detailing.

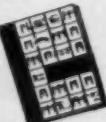
Reali-Slim Ball Bearings — Conrad, angular contact and 4-point contact types in seven standard cross sections from $\frac{1}{4}$ " to 1.000" and in bore diameters from 4" to 40".

Reali-Slim Roller Bearings — Radial and taper roller types in cross sections from $\frac{9}{16}$ " and in bore diameters from 5" to 40".

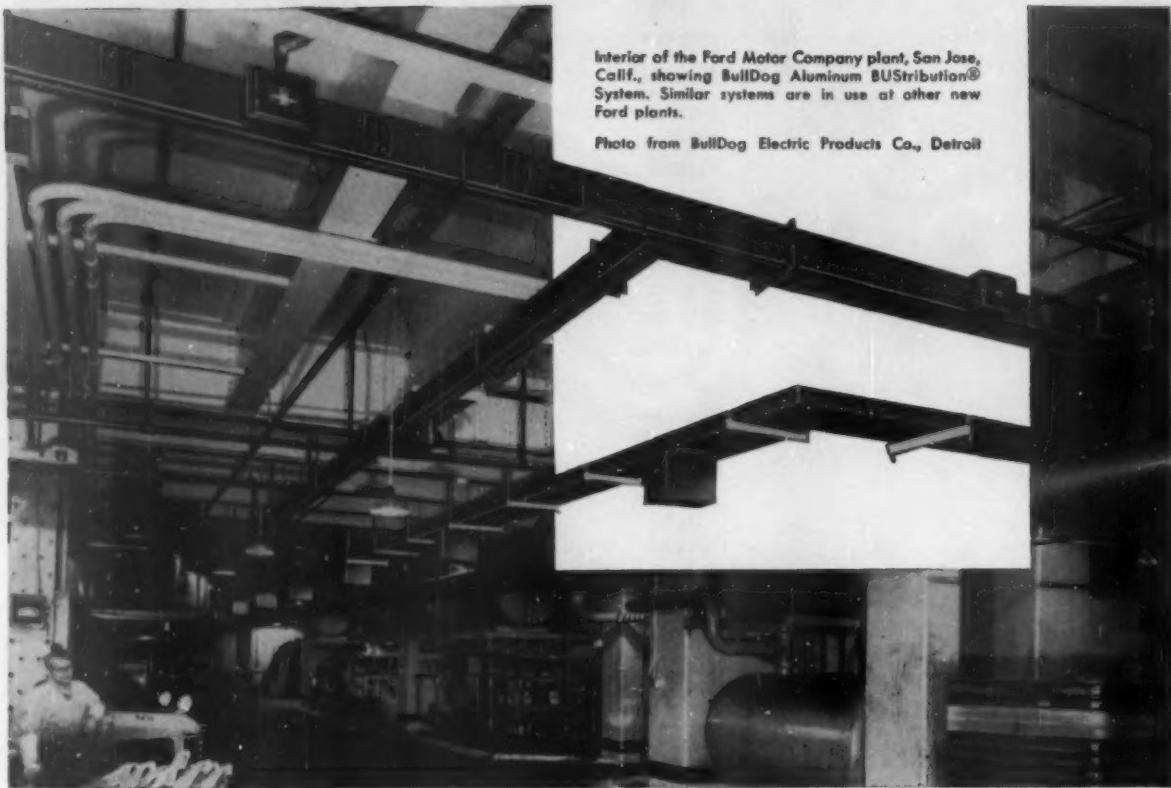
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K-561



Interior of the Ford Motor Company plant, San Jose, Calif., showing BullDog Aluminum BUStribution® System. Similar systems are in use at other new Ford plants.

Photo from BullDog Electric Products Co., Detroit

FORD INSTALLS BUSWAYS USING 1,500,000 POUNDS OF ALUMINUM CONDUCTOR

Installation costs less, provides more power per pound of metal. System is more flexible and operates with no increase in voltage drop or temperature rise over comparable copper system.

Since 1951, Ford Motor Company has been equipping its new plants with aluminum bus distribution systems. These include plants at Detroit, Chicago, Buffalo, Cleveland, Louisville and San Jose.

By switching to aluminum, Ford diverted more than 3 million pounds of critical copper to other uses. And Ford acquired a distribution system at lower cost.

Because aluminum is lighter, Ford received

more conductor per pound of metal . . . put less weight on the building superstructure.

Because aluminum costs less than copper, Ford received more conductor per dollar invested.

And these prefabricated conductors make a neat, safe, flexible installation that brings power to the job in any amount at any location. They can be readily moved to meet new power demands. Standard fittings, tools and methods are employed.

For more information on these modern packaged plant distribution systems, contact your nearby Alcoa sales office. Or write Aluminum Company of America, 2270-E Alcoa Bldg., Pittsburgh 19, Pa.

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ALTERNATE SUNDAY EVENINGS



WASHINGTON OUTLOOK

WASHINGTON
BUREAU
MAY 19, 1956



Democrats will try to make political hay out of tightening credit.

Republican confidence that the White House will be rewon in November rests largely on Eisenhower's popularity. But a buttressing factor is peace with prosperity. Right now, there's rising worry in Washington about prosperity.

Democratic hopes for a comeback have been depressed by the lack of an issue with broad appeal—something that can be used to upset the voters and make them turn out against the GOP when Election Day rolls around. The Democrats now see in business developments possibilities of a "hot issue."

Auto production and sales are on the sour side (page 36). They are still high by old standards, but they aren't high enough to prevent unemployment in the industry—and tight credit is taking some of the blame.

Farm machinery is depressed, too, with farmer buying power off.

Steel output shows some signs of easing, after setting new records. There's concern that the recent high level of orders and production was brought on largely by coming price rises, at the expense of last-half activity, when the business level will figure big in politics.

Housing starts aren't up to expectations. The current annual rate, 1.1-million, is short of the Administration's goal of 1.3-million. Scarcity of credit is blamed for this slowdown. Chmn. Rains of the House Banking Subcommittee on Housing says the goal can't be hit unless credit control is relaxed to make money easier.

—•—

Keep an eye on Rep. Patman, Texas Democrat. He's chairman of the Joint Economic Subcommittee on Economic Stabilization. And credit control by Washington has been a hobby with him for years.

How strong was Administration opposition to the latest credit curb? Patman is asking questions on this. Eisenhower has said that his advisers didn't agree with the Federal Reserve Board action raising the discount rate. It's well known here that Chmn. Burns of the Council of Economic Advisers and Treasury Secy. Humphrey had reservations. Commerce Secy. Weeks and Labor Secy. Mitchell took public stands, after the Fed raised the rate.

To get the White House side on the record, Patman has sent questionnaires to Humphrey, Weeks, and Mitchell, and to Chmn. Burns. He wants to know how far these men went to head off the Fed's rise in the discount rate.

The Fed will be put on the record, too. Reserve Board head Martin has been asked to explain just why the discount rate was raised, and to disclose what contrary advice he got from Presidential advisers.

Here's how the politicos figure in:

The Reserve Board is an independent agency, responsible not to the White House but to Congress. It consults with the executive branch of the government but is not subject to its control. Still, its actions to ease or tighten the money supply can influence election results by influencing business conditions.

The Democrats will have an issue if there is a business slide-off and if it

WASHINGTON OUTLOOK (Continued)

WASHINGTON
BUREAU
MAY 19, 1956

can be traced to the tight credit policy. What Patman wants to get on the record is just how firm was the Administration's opposition. If it was weak—merely a questioning of the action—then the political effort will be to pin responsibility on the White House. And regardless of how firm or weak the stand of the executive branch was, it will be hard to disassociate the Reserve Board from the Administration in the minds of the voters. At the grass roots, Washington is Washington.

Watch for Congressional hearings on business soft spots.

No firm plans have been made. But you can expect a political show anytime a case can be made that credit policy has hurt buying of autos, homes, or the like, or has created difficulty for small business. The business tracking job is being done by the staff of the Joint House-Senate Committee on the Economic Report. Its chairman is Sen. Douglas, Illinois Democrat.

Truman has Democratic leaders guessing. The former President has left no doubt that he's cool to both Stevenson and Kefauver. He thinks the party's chances this year depend on a hot campaign to revive the New and Fair Deal. And he doesn't see either of these candidates as the right standard bearer. Associates say he leans to New York's Gov. Harriman.

Might Truman, himself, take Eisenhower on? There are many key Democrats who think he could be persuaded, despite his age. They don't have any facts to go on. But they do note that Truman won't be the convention keynoter—and candidates seldom if ever take on this role. Instead, he will address the convention. With the Democratic Party badly split, observers are quick to point out that this could be used to launch a "draft Truman" movement.

The Democratic attack will hit closer and closer to Eisenhower, as the election year politicking moves nearer to the August convention season. Note the talk about the "Eisenhower popularity myth"—the Democratic effort to show that the GOP has lost under the President, both in Congress and at the state level. Behind the statistics being dredged up is the hope that Eisenhower's bandwagon can be derailed by attacks on the idea that he can beat anyone. It's an effort to build up local Democratic enthusiasm.

The arms race will go on, despite Russia's announcement that she is cutting her ground strength. No quick change in U. S. defense programs is in sight—Eisenhower will get Congress' O.K. for his armament budget.

There are long-term implications, however. If Russia does demonstrate to the world that she is reducing her forces, it will become harder and harder for the Western alliance to keep up its arms spending. Such a demonstration by Russia could, for example, persuade Congress next year that the defense rise now under way is not necessary—and that might mean a new leveling out of defense spending.

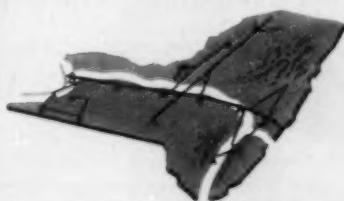
Lingering tax-cut hopes will be dealt a blow next week. The Treasury, through Secy. Humphrey, will report that the surplus for the current fiscal year, which ends June 30, will be much larger than the \$200-million predicted heretofore. But the official position will be that the rise is not enough to finance a tax cut this year. One might come in 1957.

"UPSTATE, N.Y."



RECOGNIZE this busy Upstate N. Y. city? It's Utica, where an unusually stable labor force can give new industries high, efficient production. Companies that have built plants here testify to another advantage of this well-balanced community . . . local governments that cooperate with labor and industry in an adult job training program.

At left you see another of Utica's attractions: a wealth of transportation, provided by the New York State Thruway . . . railroads (with one of the largest LCL terminals in the U. S.) . . . Barge Canal . . . air service. Add to that, fine education and recreation, and *all the low-cost electricity and natural gas you need!* Learn more about the Utica area and the entire "Upstate, N. Y." region . . . write Earle J. Machold, President, Niagara Mohawk Power Corporation, Syracuse, N. Y.



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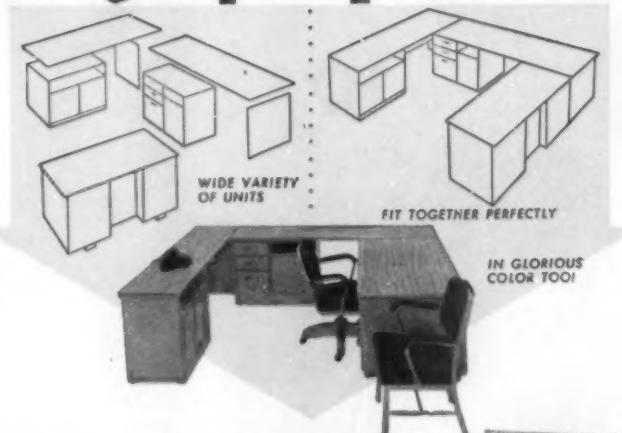
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smart contemporary styling, the silently gliding drawers in all desks and files.

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"What's the man trying to do? Cheat us out of our stamps?"

Trading Stamps: Bane or Boon?

The irate housewives in the picture above didn't pop out of an artist's hat. The cartoon is based on a real incident, told by a real food chain operator to a BUSINESS WEEK reporter. It illustrates the strength of what is probably the most hotly battled merchandising development in retailing today: the trading stamp (cover).

What makes the ladies mad is this:

For every 10¢ she spends at a stamp store—her grocery store, quite likely, though it may be a gasoline station, drug store, cleaner, even a funeral parlor—the store clerk gives her a stamp. Most stores buy the stamps from a company that operates stamp plans.

When she has filled her stamp book—this generally takes 1,200 stamps—she takes it to a redemption center, which is usually operated by the stamp company. There she picks out a toaster, a wallet, or some such from the assortment the redemption center carries, and pays for it with her stamps.

Naturally if the butcher offers her a

special price on a cut of beef she's going to get fewer stamps. Instead of feeling delighted at the price savings, this bewildering consumer can feel gyped.

- **Giants Move In**—For most of the trading stamps' long career in this country, they have found their strongest backing in the small- or medium-sized store or chain. In the past couple of years, though, and especially during the last year, a new force has put unexpected vim into their development: The big food chain has moved in.

Last year, Kroger Co. sparked an outbreak of stamps, especially in Midwestern cities, where Kroger is strong. Stamps hit Philadelphia in a big way only this year, when Penn Fruit Co., Food Fair Stores, Best Markets, Acme (American Stores Co.), and others took them on. In the last couple of weeks, Grand Union Co. broke the ice in metropolitan New York, with American Stores and Gristede Bros. on its heels.

- **Diehard**—So far, Great Atlantic & Pacific Tea Co. and First National

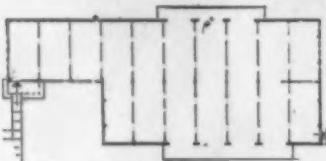
Stores have held firm. But their heavily publicized price cuts in recent months are almost surely the weapon with which they hope to stem the tide (BW—Feb. 4'56, p93).

Safeway Stores put up a monumental battle against them under its former president, Lingan A. Warren. This battle lost some of its momentum when Warren resigned—partly because of losses from the company's stamp battle (BW—Sep. 10'55, p28). Safeway is still anti-stamp, but even so some of its stores are offering a variant, whereby the customers collect cash register tapes, turn them in for premiums.

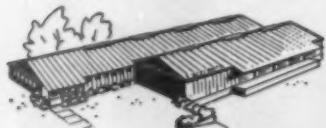
- **Pros and Cons**—According to Premium Practice magazine, a trade publication, the stamp business among food retailers jumped 76% last year. Today, this publication believes that food stores account for 55% of all stamp users.

This invasion by the big chains has intensified all the old questions and rumblings over stamps to the dimensions of a first-class storm. Questions

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Whatever your needs... 28 sq. ft. up to 100,000 sq. ft. or more... for plant, office, shop, or similar structure, you can save time and money with ready-to-erect Armco Steel Buildings. They combine custom-built convenience and standard-unit economy. An Armco Construction Crew will erect your building quickly, or you can have it erected by your regular contractor or your own crew.

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"Wait, lady, wait—! You forgot to take your change."

like these are raging: Are stamps a price cut—hence, subject to unfair trade practice laws—or are they a cost of doing business? Are they a cash discount? Are they an evasion of resale price maintenance? Are they ethical, sound economically, or a fraud?

In city after city, merchants and trade associations battle out these issues. You hear them in court after court, in state legislatures—28 states within the past year have heard proposals to bar or curb stamp plans. No one has yet given answer that satisfies everyone.

I. So Big

One reason for the unprecedented furor of the last year or so is the dimensions of the stamp business. There are, to be sure, no firm figures on this because stamp companies are mostly privately owned and keep their sales under their hats. But there are clues.

Harvey L. Vredenburg, of the State University of Iowa, has just published a study on stamps, printed by the Bureau of Business Research of Indiana University School of Business. He estimates that retail merchants pay some 370 stamp companies \$490-million a year for trading stamps. Premium Practice

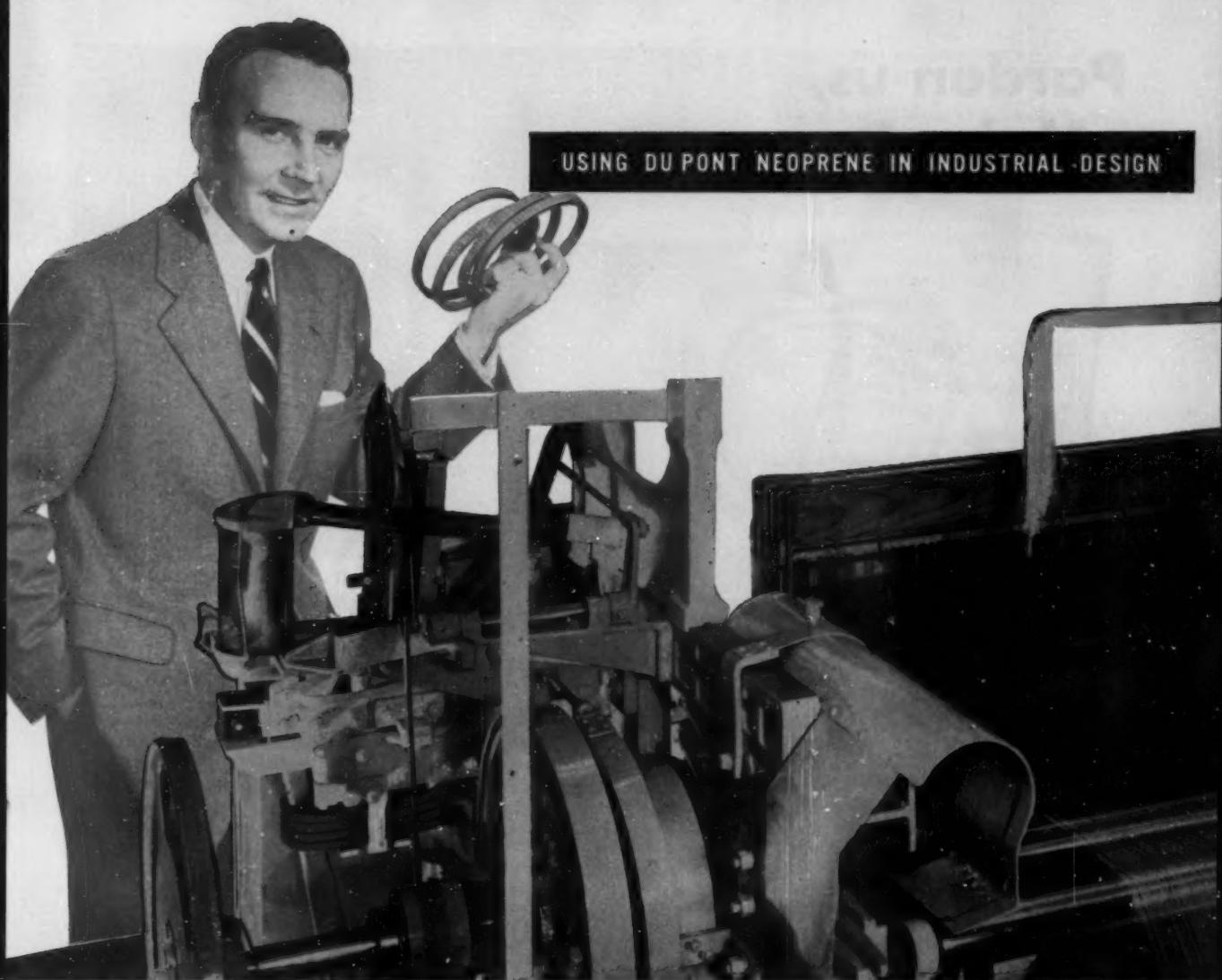
in its May issue pares this to 200 stamp companies selling \$212-million of stamps.

Merchants pay somewhere around 2% to 3% of their gross sales for stamps. On this basis, retailers gave out stamps on anything from \$10.6-billion to \$24-billion worth of goods sold. Vredenburg estimates that the retail value, at list price, of merchandise given out at redemption centers runs somewhere between \$442-million and \$465-million.

• **Who Saves**—Vredenburg figures that over 50% of U.S. families save stamps. Premium Practice puts the number currently at some 40-million families. Sperry & Hutchinson Co. (the No. 1 in the field by far) alone, with about 60,000 retail accounts, is reported to serve some 15-million households.

II. Climate: Favorable

The little lady in the cartoon is the main reason for the tidal wave. Last year Kroger—prodded by the competition of some of the smaller stamp stores—began to study the situation; it found the consumer was the answer. "Before we started," says a Kroger official, "I could have given a speech on why stamp



USING DU PONT NEOPRENE IN INDUSTRIAL DESIGN

He helped show the way to a \$3,000,000 saving

His job is to help companies like yours in the development of new or improved products. His tools are imagination and knowledge—his materials, all types of rubber. He's the technical representative of your rubber-goods supplier.

He was recently called in by a textile-machinery manufacturer to help redesign the check strap on new high-speed looms. This strap absorbs the impact of the picker stick which catches and throws the shuttle across the loom face 200 times a minute. Leather check straps, traditionally used on older-type looms, could not withstand the violent impact and constant flexing of the new high-speed machines. Average life of these straps was 6 to 8 weeks.

The technical representative and the machinery manufacturer

joined forces and came up with a completely new check-strap design, employing four straps instead of one. Each strap consists of plies of woven fabric and tire cord firmly bonded by neoprene into a homogeneous unit. Service trials prove that the new check straps do not stretch out of shape and that they outlast comparable leather straps 3 to 1—a yearly saving of \$5 to \$6 a loom, or an expected saving of \$3,000,000 annually to the industry.

Why not let your rubber-goods representative help you on your problems? His technical knowledge and experience may be able to show you the way to product improvement and cost savings—using the Du Pont elastomers, neoprene and HYPALON.

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Pardon us, Major Parson . . .



We're telling all our friends about your fine new book* but we'd like to point out one thing. You say:

"Because of the need for sending technical information to the ground from a test missile, telemetering developed . . . Telemetering, which one might say is the art of measuring conditions on a vehicle in flight and radioing the information back to earth, has developed until it is a science in itself."

Actually, telemetering—despite its recent fantastic advances in missiles—has been around a long time.

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6.30



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"Don't you give stamps, doctor?"

plans are no good. We decided otherwise. We had overlooked the fact that people like to save stamps."

If you think about it, this should be no surprise. Essentially the trading stamp is a form of nonprice competition. It's no secret that this is a day when price has lost its punch as a competitive force (BW-May 5 '56, p121).

Dr. Bertrand Klass, of Stanford Research Institute, made a special study of the subject. His answer: Stamps make women feel frugal.

- **Dual Purpose**—Actually, the stamp plan neatly seems to satisfy two wants at once. It satisfies the puritanic hang-over that makes thrift such a virtue—because ostensibly women pay nothing for the merchandise they receive. At the same time, it satisfies the urge for more possessions—particularly luxuries that their consciences might not allow them to buy outright. Thus, a wife of a BUSINESS WEEK reporter has her eye on a Waring blender. She wouldn't feel quite right about spending money for this, and she doesn't mind that it will take her perhaps a year of buying to get the stamps for it.

What the stamp merchant is really doing is selling his own unglamorous, almost you might call them unwanted, essentials—food, gasoline, drugs—through the lure of wanted nonessentials—pop-up toasters, mixers, watches.

- **Something for Nothing**—Quite a few women—it's the women who seem to go for stamps in a big way—are influenced by the happy feeling they are getting something for nothing. Says an operator of Milgram Stores, Inc., a Kansas City (Mo.) food chain, "The people have a look in their eye you don't see anywhere else when they come to our redemption showroom with their stamps."

On the other hand, plenty of shoppers are openly skeptical whether or not they are getting something for nothing and they couldn't care less. A Tulsa housewife says frankly she would rather pay a few cents more at a store and get stamps. "We do realize," says a Den-



"Our western production has multiplied 11 times since moving to MOA"

• An interview with P. F. Brown, Manager, AUTO-LITE BATTERY Plants at Oakland and Paramount, California.

Q. Mr. Brown, the nation's largest corporations have now set up western branch plants in Alameda County, or as it is also called, the Metropolitan Oakland Area. All these companies had various reasons for coming here. What was yours?

Mr. Brown: The Electric Auto-Lite Company is the world's largest independent manufacturer of electrical equipment for automobiles. When the car makers started building western assembly plants, our battery division followed closely behind. We picked MOA because our largest customers picked MOA.

Q. In addition to batteries for new cars, don't replacement batteries also account for a large share of your sales?

Mr. Brown: They certainly do—and that is another reason why MOA was such a logical choice. This is the chief radiating point of the West's transportation network. Three main rail lines and a new system of freeways insure the fastest possible delivery to our distributors throughout seven western states.



Q. What else have you found advantageous about doing business in MOA?

Mr. Brown: The labor situation out here is particularly good. There's very little absenteeism, perhaps due to the climate, which I think is about the best in America. It's like Spring all year 'round in MOA and year 'round outdoor living keeps a man fit and boosts his working morale.

Q. Doesn't the mild climate also play an important part in lowering plant operation cost?

Mr. Brown: Yes. For one thing, it reduces power and fuel bills. For another, it eliminates the expense of wall and roof insulation.

Q. How about supplies, Mr. Brown? Can you get everything you need locally?

Mr. Brown: Our biggest requirement is lead, which comes from western mines. Our acid is made in the West and so are all our packaging materials. A neighboring manufacturer supplies our battery boxes. Even the MOA water—we use

tremendous quantities of water in diluting acid—is of the right quality.

Q. A crucial issue to business is the attitude of local government. How does MOA rate in this regard?

Mr. Brown: Local government is not only friendly but downright helpful. During one of our many plant expansions, we had to make a few changes that conflicted with zoning ordinances. The county architectural commission came right down and worked out a very satisfactory solution of the problem.

Q. All in all, then, you have had a successful time of it in MOA?

Mr. Brown: I joined the company when the western branch was first established in 1922. We had 25 employees then. Now we have 125, and our present production is 11 times what it was 33 years ago. Our experience in MOA has been most successful. Since the West is now growing twice as fast as the rest of the country, I'd say the future looks even more promising.

Governments Create a Friendly "Climate"

One reason industries "grow places" in MOA is the governmental "climate" in which they operate. Like our weather-climate it is unchanging—warm, friendly, non-partisan.

It reflects universal recognition by County and City officials of the importance of industry to the economic well-being of the area. Each year since 1936, the Alameda County Board of Supervisors and the Oakland City Council have appropriated funds to advertise MOA by inviting industries to locate here. These officials and the officials of other communities in the area are constantly working to improve our "product"—by voting sewer and other improvement bonds, passing wise zoning laws and extending police and fire protection ahead of demand.

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Is it easy to seat securely?

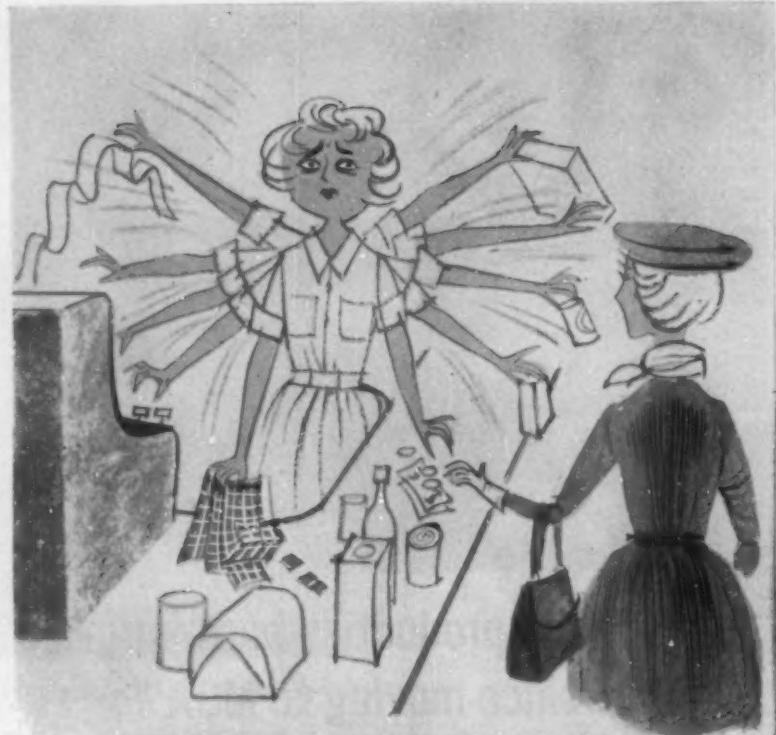
Westinghouse fluorescent lamps are built with "guide bumps" on the end-caps. Easily felt with the fingers during lamp installation, they tell at a touch when the lamp has been securely seated in its sockets.



For the full story on how to get more for your money in fluorescent light, contact your Westinghouse Lamp representative. You can be sure... if it's Westinghouse.

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WHERE BIG THINGS
ARE HAPPENING FOR YOU



"What's a checkout girl to do—All this, and stamps, too?"

ever housewife, "that Safeway saves us money. But," (sigh) "you can get awful nice things with stamps."

• Forces at Work—Several other strong retail currents work for stamps today.

For one thing, there is an excess capacity of food retailing now. This in itself heats up the competitive urge.

Second, in this day of mass marketing, it is getting increasingly tougher for a supermarket to create a personality that distinguishes it from another supermarket. Stamps offer one way to make the consumer sit up and take notice—until every store in the neighborhood has them.

By the same token, premium manufacturers tend to welcome any outlet for their outpouring of goods—as the discount house's progress demonstrated. Sperry & Hutchinson, with some 400 redemption centers the country over, believes it is the biggest customer for Samsonite luggage. It is one of General Electric Co.'s biggest buyers of small appliances, a heavy patron of International Silver.

• Legal Aspects—Stamps have always been a bone of contention in the law courts. Back in 1916, the U.S. Supreme Court ruled that stamps may be inimical to the public interest, hence fall within the police power of the states. Quite a few states require licenses to operate stamp plans. The District of Columbia outlaws them outright. Wisconsin requires redemptions

in cash. The states of Washington and Kansas impose punitive fines on retailers who redeem their stamps in merchandise.

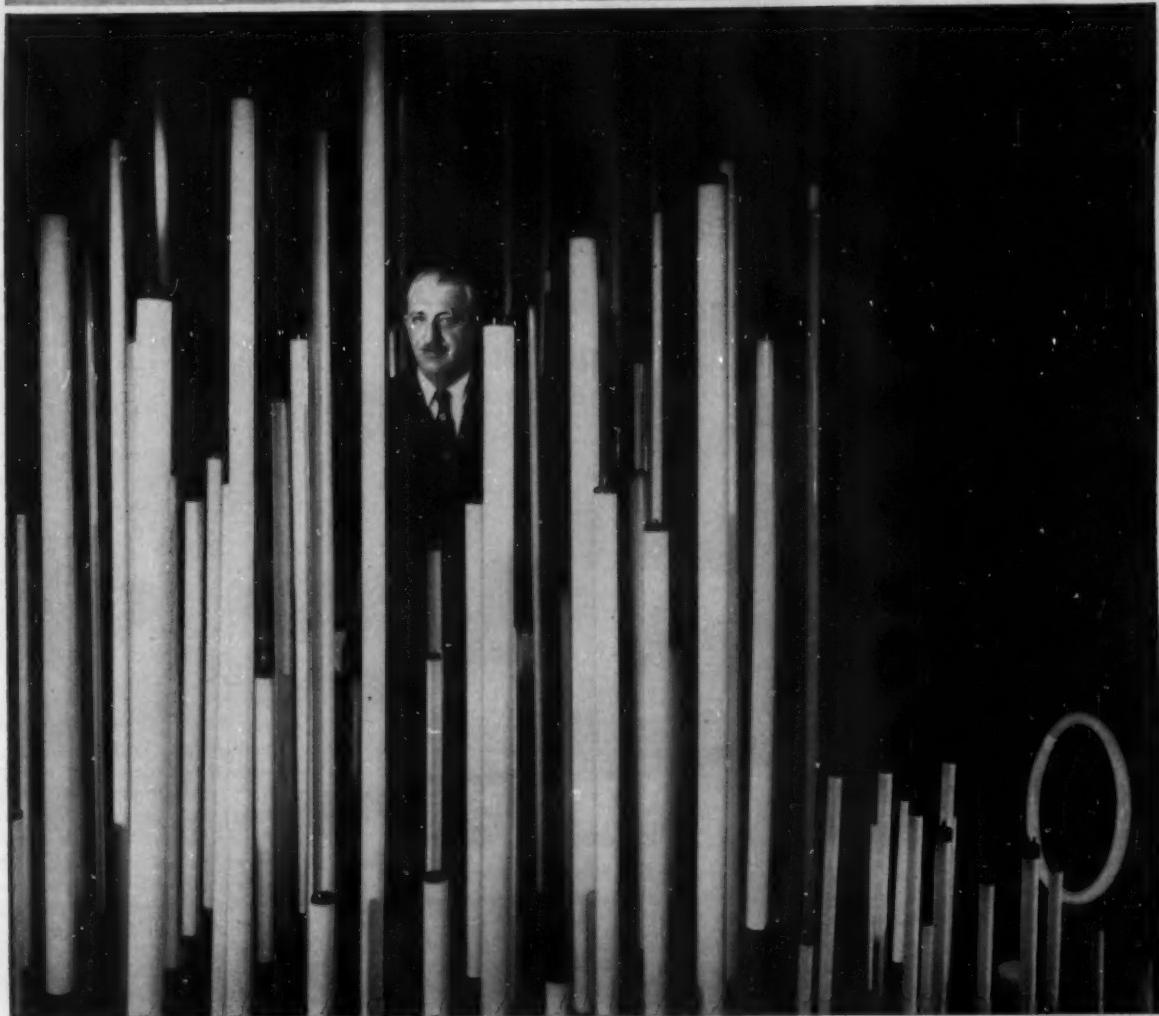
Most attacks on the legality of stamps have centered on two points: One charge is that stamps are a way to evade fair trade. The other is that they are a price cut that violates the states' fair sales practices laws, which require that merchants charge a stated percentage above their costs.

However, court after court has blocked both these charges by ruling that stamps do not constitute a price cut, but are a discount given for cash purchases. This has been the view of the stamp companies from the beginning. To underscore this interpretation, stamp companies permit department stores to give stamps on charged items only if the customer pays off his bill within 10 days. The Utah legislature did rule the stamps are a price-cut; this view is being litigated.

• Two Ways—The fair trade laws actually worked both ways. Many merchants were scared off stamps for fear they would prove a violation. On the other hand, since fair trade restricted their freedom to cut prices, they hunted around for other competitive aids.

The newest attack on stamps has come under the escheat laws. Several states have sought to claim that the money from unredeemed stamps belong to them. One such case against Sperry

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6-455



"Is he selling food or stamps?"

& Hutchinson—in New Jersey—is still pending.

One further hazard still confronts the stamp companies, though—and it could be decisive. For the past six months or so, the Federal Trade Commission has been doing some investigating. It will say little, except that it is looking for possibilities of price discrimination, and the like—and also into possible law violations on the part of retailers who may make concerted efforts to boycott stamps.

III. Frontal Attack

The strength of the stamp movement is matched only by the violence of the opposition. Many merchants view this whole development with unmitigated horror. Headache, leach, scab, profit-grabber, parasite—these are the milder epithets they throw at these innocent-looking bits of paper.

Trade associations denounce stamp plans furiously—or keep nervously quiet as more of their own members yield to their lure. Cities such as Chicago where stamps haven't hit are quivering with the expected onslaught. Big chains—Jewel Tea Co. is reportedly among them—are holding a stamp plan in abeyance in some markets, ready to let it loose the instant a competitor opens up with stamps in its market.

The attack comes from all sides: both on broad grounds of principle and on the narrower aspects of how plans actually work out. The broad charges boil down to two main ones: The stamp plans are a fraud that deceives the consumer; they profit no one but the stamp companies.

• **Basic Pattern**—To understand the charges, it's necessary to take a closer look at how the plans work. While they vary in details, all follow a basic pattern.

First look at the consumer's part in the operation. What does she get out of it?

To fill one consumer stamp book, she has spent \$120 on merchandise in the stamp-giving store. Most experts feel she'll get from \$2 to \$3 worth in reward for one book.

Whether or not she loses on the deal

This midget . . .



Left: *Monilia*, a slime forming micro-organism, magnified about 100 times. Below: A huge, modern papermaking machine.

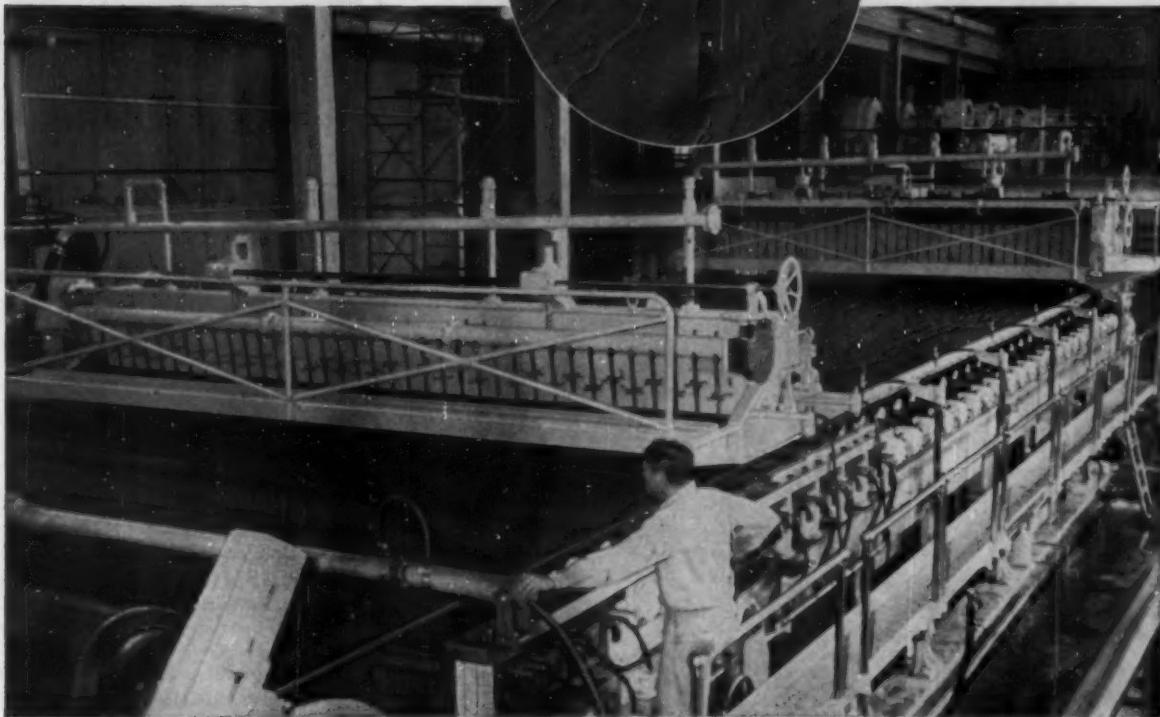


Photo courtesy of National Container Corp., Valdosta (Georgia) Mill.

. . . could hogtie this GIANT!

The midget is *Monilia*, a micro-organism that manufactures slime to spare . . . builds up like taxes. The giant is a huge, high-speed paper machine, whose production rate has a basic relationship with total paper mill output — and profit.

Slime in the headbox (the feed into the paper machine) could cause paper breaks which stop the whole operation for too-long periods.

The answer is effective slime control . . . And the reason paper machines do not stop for slime breaks is Nalco's Slime Control Program.

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depends on an element that is very hard to measure: Did she pay more than she should have when she spent \$120 on merchandise?

• **Source of Profit**—Where does the stamp companies' profit come from? A frequent price on a single pad of 5,000 stamps is quoted at \$15; this the retailer pays to the stamp company to cover the cost of the service. The stamp company supplies stamps, stampbooks, catalogues; often it has its own redemption centers and warehouses.

At \$15 for 5,000, the retailer pays 3¢ per stamp. The consumer's book of 1,200 stamps thus represents a value of \$3.60 paid in by the retailer. S&H figures the average retail list price of an item that one book will "buy" is about \$3. Apparently the stamp company makes a profit on the sale of stamps.

S&H officials insist that this isn't so in their case. In practice, they explain, few merchants buy only one pad at a time, and the price goes down as their purchase goes up. S&H maintains that every dollar the stamp company collects from the retailer is represented by a dollar's worth of merchandise that the consumer wins. But it is plain that it is possible for stamp concerns to make a profit at this point.

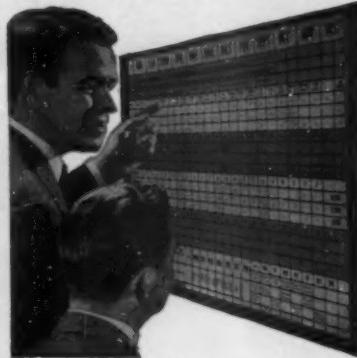
• **Gravy**—Retailers are quick to point out that stamp companies pay wholesale prices for the items they give out. As big buyers, they can often make a good profit, especially since their "retail price" is usually list. S&H says that this is the major source of their profit, as it is for any retailer.

Unredeemed stamps can be just so much gravy for the stamp company; indeed some say this is their chief profit source. No one agrees how big a factor unredeemed stamps represent. S&H cites U.S. Treasury Dept. figures to indicate that in the past 30 years 95% of its stamps have been redeemed. Retailers feel 60% may often be closer to the truth.

• **Stingers**—Two elements in this picture stick in the throats of the retailers. One is the high cost they have to pay for stamps, which in many cases is enough to erase their profits. The fact that a third party—the stamp company—enters the picture also particularly irks many of the retailing fraternity. What sense does it make, they ask, that outside industry should live off their sales?

• **The Split**—If you go to the field and ask—as BUSINESS WEEK did—how retailers feel about stamps, you find that non-users—to a man—detest them; users split all over the lot. In Pittsburgh, where stamps have been going great guns for two years, the vast majority "wish stamps had never started." In Syracuse they are viewed as a "necessary evil." A Worcester, Mass., gasoline station operator would be happy to see a law against them. Clevelander say they

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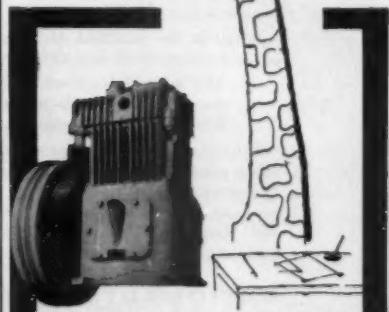
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were hijacked into them by competition.

The consumer who thinks she is getting something for nothing is just kidding herself, the anti-stampers insist. She is paying all right—in high prices. Most stores, especially the big ones, insist they don't raise prices when they take on stamps, but some admit that they do. One observer checked the item-for-item differences in prices in a stamp user and a store that didn't give stamps. He found the difference exactly equaled the stamps' cost.

If the retailer can raise his sales volume sufficiently, he can absorb that 2% or 3% additional cost. Yet many stores testify sorrowfully that sales soared when they first put in stamps, sagged again when competitors offered them. "Once everybody is in," says a Houston food store, "we might as well all quit."

• **Competition**—This law of diminishing returns from stamps can hit hard. Many stamp companies protect their customers by allowing only one store of a kind in an area to handle their stamps. But a good competitive stamp washes out this advantage. This leads to all sorts of costly stepped-up promotions—such as double, or even treble stamps on some days—that promote not the store's products but the stamps they handle.

Denver is the classic instance of such competition that led to an all-out stamp war about a year ago. Finally, the stamp companies themselves called a halt to the double, triple, quadruple stamp deals.

• **Gripes**—Stamps create other headaches for retailers, too: the slowdown at the checkout counter, the added bookkeeping costs, and the like.

Gasoline dealers seem especially vehement. A Hartford station operator says, "Stamps cost me about \$2,500 a year, and I'm not getting anything out of it." A San Francisco dealer says, "I don't want to give a discount to my customers."

They have it tough, anyway. If they raise prices, the rises are more apt to be noticed. Price wars are plaguing the industry now; add in stamp costs, and the profit picture can get dismal.

Quite a few concerns have thrown out the whole stamp operation—mostly because of the cost. Many gave them up because the only alternative, they felt, was to raise prices.

• **Opposition**—The most vigorous opposition in recent months centers in the West Coast. Ten large chains there (eight grocers, two drugs) have banded together to fight fire with fire. They won't use their own stamp plan, they say, until the competition forces them to. Their avowed aim is to take the profit out of stamps.

• **Cost-Cutter**—Owning your own stamp

Rockwell Report

by W. F. ROCKWELL, JR.

President

Rockwell Manufacturing Company



TODAY practically everyone in business is "Research Minded"; the whole subject has become very fashionable and has surrounded itself with a great deal of glamour.

There is much good in this, of course, because it is through research that individual companies, and our entire standard of living, can keep moving forward. But there is also danger in it, if Research—with a capital R—is in and of itself regarded as a kind of magical insurance policy for the future.

It is not enough for management to believe in research, allocate funds for it, and then wait hopefully for results. Management must also actively manage research or it can become a very unproductive business tool.

For there can be too much research, as well as too little, for a company's own good. And there can be research in the wrong direction, or in too many directions, without a realistic chance of achieving desired goals. There can be research ill-balanced as between short term, medium term, and long term projects so the pay-off is too small, or too long delayed, for practical benefits.

There can be research in a bad research "climate," with creative thinking either stymied by too many restrictions or dissipated by lack of realistic objectives. There can be unduly impatient research, so that when only one project out of twenty is commercially successful (a not uncommon ratio) there is destructive discouragement.

Keeping the right kind and amount of research going in the right direction at the right pace is not a simple job. It is one of difficult, delicate balances and complicated questions to which there are no easy answers. It requires a great deal of work and study, and probably always will.

But it is, we believe, one of management's most important responsibilities to its shareholders, its employees—and its customers.

* * *

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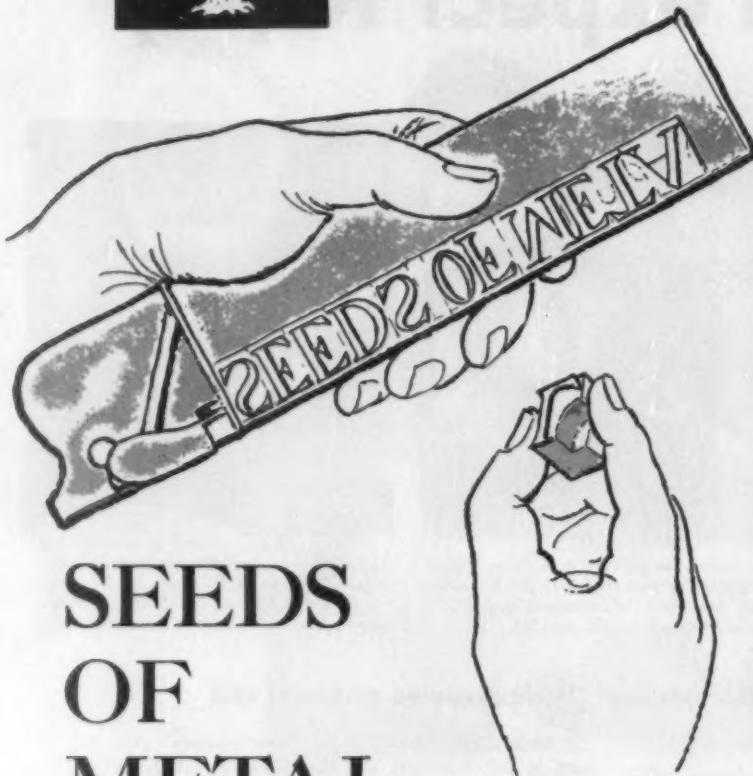
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operation appeals to many as a way to cut costs. Outstanding example is Top Value Enterprises, Inc., Dayton, which in a year has jumped to the No. 2 spot. By Apr. 1 of this year, it had 113 redemption stores in 22 states, and over 20,000 retail customers.

Kroger has a third interest in Top Value; Cappel, MacDonald & Co. (which sets up sales incentive plans) has another third; Hinky Dinky Food Stores, Stop & Shop, Inc., Penn Fruit Co., Standard-Humpty Dumpty, plus two unknowns, own the rest.

IV. The Pros Answer

To this barrage of complaints and attacks, stamp companies fire off some ammunition of their own.

Stamps may not create new business at the retail counter, but the stamp companies believe that their redemption centers aren't just "stealing" sales from more legitimate outlets. In many cases, because of the kind of item the housewife picks as her premium, the redemption centers create plus business. Stamp plans create the same kind of market that installment selling created, they hold.

It's fallacious, they say, to argue that the cost of the stamps lowers the retailer's profit. A merchandiser can get a volume increase from stamps that will lower, not raise, his costs—without raising prices, they insist.

• **Breakeven Point**—Just where the break-even point on stamps falls depends on whom you talk to. Top Value officials believe that a 15% increase in sales brings a higher profit margin. Eagle Stamp Co., big St. Louis oldtimer in the field, puts the break-even point at a 20% increase. An S&H official narrows it down more finely. He says food stores must up business 20%; gas stations, 10%; drugs and hardware stores can get along with a 5% increase. Boston Gasoline Dealers Assn. also figures 15% will do the trick. Yet a survey by National Assn. of Food Chains estimates you must increase sales at least 33% in 90 days.

Some stores, though, say that even if they haven't yet reached the point of lower costs, they still aren't losing. They charge stamps to promotion, and dock their advertising budget.

How can anyone sensibly argue, they ask, that stamps at the same time represent a price hike and a price cut? They point out bitterly that advertising adds nothing to the value of the merchandise. Yet the consumer pays for this as much as for stamps.

• **In Praise**—If you go to the merchants themselves, for every griper you can find someone ready to sing the praises of stamp plans. A Portland gasoline dealer, after seven years with stamps, thinks they account for 40% of his

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business. "I don't know what they are squawking about," he says. "I've never cut prices while my competitors have cut 2¢ to 4¢ below my prices."

• A Speedup—Department stores so far have not ventured widely into this promotion, but most who have done so appear satisfied. Goldblatt Bros., in Chicago, finds "huge acceptance" for its plan. May Department Stores in Cleveland has used Eagle stamps for 40 years. Lit Bros. in Philadelphia has its own Gold Square stamp, redeemed in its own store. In Milwaukee, Ed Schuster & Co., and the Boston Store both have them. Schuster, a pioneer, is enthusiastic. Famous-Barr Co. (a May store) in St. Louis figures Eagle stamps are "part and parcel of our business."

Stores that have charge accounts find stamps have this plus: They speed up collections. A small Pittsburgh department store thinks it gets paid before anyone else because it gives stamps if accounts are settled in 10 days. A Fort Worth store says that before it offered stamps, it got 47% to 50% of its charge payments on time. Now it is close to 60%.

Another Fort Worth dealer—floor coverings, this time—says every customer who comes in seems to feel he is entitled to a 5% discount. He tells them, "I can give you 5% discount or I can give you stamps, but I can't give both." They take the stamps, he says. And because the stamps cost 2.8%, he saves money.

• Food Chain Reaction.—You'll find a lot of enthusiasm among the big food chains—perhaps because they are still new in the field. Penn Fruit is "sold" on them. Kroger speaks more cautiously, but says, "Where our competition doesn't have stamps, they are very effective."

National Tea Co., using Eagle stamps, says results have fully justified costs. Humpty Dumpty found stamps gave it an edge against a big chain competitor. A Tulsa store reports that sales leaped 60% in the first month—partly because this was a new store. But its older stores showed an 18% increase—and 10% would have paid for the cost.

A Super Valu Stores operator in Houston figures stamps bring \$100 to \$150 more gross profit a week than it had before stamps. But there's a catch. Just about all this gain, the store says, comes on Tuesdays, when it offers double stamps. Pre-stamp Tuesday sales ran around \$2,700; now they are \$10,000. Stamps thus not only upped gross sales and profits; they converted a slow day to the best day, and evened off the week's work load.

Another often-cited experience is that of Thorofare Markets chain in Pittsburgh. In two years of S&H stamp



SAFE AND SOUND! These king-size TUBE-TURN Welding Fittings at Manufacturers Light & Heat Company's new Brinker Station, Leetonia, Ohio, handle 36,000,000 cu. ft. of gas per day! They provide optimum flow efficiency, cut gas costs.



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HE'S MAKING BETTER WORKING CONDITIONS! Many factories have radiant heating systems for comfort and efficiency. Using TUBE-TURN Welding Fittings, this piping is permanently leakproof — maintenance-free.

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At Chester C. Bolton School, Lyndhurst, Ohio.

● Kindergarten tots spend much of their school hours romping on the floor. And in this modern school, they're kept warm and comfortable by radiant heating. This piping system is laid in the floor, encased in concrete—and forgotten! It will last the life of the school building because it's welded . . . permanently leakproof. Youngsters and taxpayers for decades will be "sitting pretty".

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**Diamond
Chemicals**

—without competition—it more than doubled its volume. To Thorofare, the stamps have proved a "complete blessing."

- They Work-If-Successful stamp users underscore this important point.

Stamps work—but only if merchants use them wisely. They won't offset bad selling practices or poor merchandise.

On broad grounds, this may be the stamps' chief justification. The housewife may be a sucker, but she still won't go for stamps if they are all a store offers.

Vredenburg adds some cautions. A store that already dominates a market won't gain through stamps because it can't bring in enough new volume to offset costs. When operating costs are pretty well fixed, he says, higher volume—through stamps—lowers per-unit cost of selling. If operating costs fluctuate, or if the market is unstable or hostile, profits may well go out the window.

V. Where Now?

Whether for better or worse, stamps have made their mark. They have caused some blood to flow, and plenty of headaches. They have also in all likelihood helped distribute goods. And, again whether for better or worse, they tend to stabilize prices. A Hartford grocer says, "I don't know whether stamps helped business or not. I do know we have to make up for some of the costs of the stamps by cutting down on our weekly leaders (advertised specials)."

- Killing the Goose—Many questions are still to be answered. Stamp opponents believe, if all stores are forced into stamps, the plans will annihilate each other. Stamp proponents answer: Look at advertising. Everyone advertises, and no one talks about giving it up.

Competition has made its mark on stamp companies, too. Top Value got to its status in the industry partly by aggressive promotion. S&H and other stamp plans—which promoted themselves little if at all before—are answering in kind. Consumer magazines, TV, newspapers, radio will reap some harvest.

- Long-Range—Conceivably, the stamp plans, once the prop and stay of the small store, may work against the independent now that the big companies are getting on the bandwagon. Conceivably, too, this might weaken the legal status of trading stamps.

Come an economic slump, there's no doubt that price will once again be the all-important economic weapon. Sperry & Hutchinson reports that during the Depression it ran into hard times. But give the consumer a full enough purse and fair redemptions, chances are she'll go on with her stamp collecting. END

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In Marketing

FTC Settles Part of Its Fight

Against Food Chains, Suppliers

The Federal Trade Commission last week agreed to a settlement in the first of a series of complaints it made against two major food store chains—Giant Food Shopping Center, Inc., Washington, D. C., and Food Fair Stores, Inc., Philadelphia—and 11 food products manufacturers.

In the settlement, Tetley Tea Co., Inc., New York, one of the manufacturers, signed a consent order that prohibits it from giving promotional allowances to its customers except on a "proportionately equal" basis. Tetley Tea's consent to the order, FTC noted, does not constitute an admission by the company that it has violated the law.

Last November, FTC charged that the two big food chains, and the manufacturers selling to them, violated the Robinson-Patman Act when they worked out joint payments for advertising during the stores' anniversary sales (BW-Dec.10'55,p54). These payments, FTC said, discriminated against the two chains' competitors.

The complaints against the two food chains and the 10 other manufacturers are still in litigation before FTC.

Hot-Blooded Gasoline Dealers

May End Their Five-Year War

New Jersey's battling gasoline retailers may be in for a new era of peace. For the last five years they've been engaging in wild price wars. Now, several oil companies have decided to fair-trade their gasoline in New Jersey.

Esso Standard Oil Co. two weeks ago established minimum retail prices for its dealers. Last week, Socony Mobil Oil Co., Cities Service Oil Co., and California Oil Co. followed suit.

But Shell Oil Co. is not going along with the move. Says Shell: "It has been our experience that fair-trading our products has . . . placed our dealers at the mercy of price raids by their competitors."

Some think Shell is following the wrong line. Charles E. Rabig, president of the New Jersey Gasoline Retailers Assn., says dealers there have "accepted fair trade wholeheartedly."

Only a few dealers will try to undersell—the rest have had enough of price wars, he says.

These wars have been fierce and frequent in New Jersey. Gas stations are concentrated heavily there. The state has about 10,000 licensed dealers. Many gasoline refineries operate in the state, and the volume of traffic in New Jersey is very high. All this breeds hot competition.

Fair trade agreements kept competition from turning into price wars between about 1938 and 1951. Then the agreements broke down under (1) increasing competi-

tive pressure, and (2) the U.S. Supreme Court's ruling that year that dealers who didn't sign fair trade contracts could not be bound to adhere to suppliers' suggested minimum prices. Next year, Congress passed the McGuire Act, making it legal for suppliers to bind even those dealers who did not sign contracts to minimum prices.

The oil companies are reverting to fair trade at a time when it has been losing ground in other parts of the country. Companies are either abandoning it, as Sheaffer Pen Co. has (BW-Dec.10'55,p64), or state courts are ruling against it. The latest court action was in Virginia where the high court just voided the state fair trade act because it conflicted with an earlier anti-monopoly law. Seven state supreme courts have thrown out their state's fair trade laws in whole or in part; three other states have had no fair trade laws.

For Color-Conscious Customers,

Macy's Plans a Lemon-Yellow Test

Life around the home is getting more dazzling these days what with the ever-widening range of brilliantly colored kitchen appliances, typewriters, telephones that manufacturers are turning out. But the gathering brilliance has manufacturers and retailers mulling over the question: What color do the customers prefer?

For years, pink has been the leader. But other shades are gaining. American Motors' Kelvinator Div., for instance, says that although 31% of its colored appliance production is in pink, yellow, with 20% and turquoise, with 16%, are moving up fast.

And now R. H. Macy & Co. is betting that yellow is about ready to seize leadership in the color parade.

So this year it will give the color a wider consumer test when it decks out its entire New York store in lemon yellow. For this, it has worked out a promotional tie-in with Sunkist Growers, who this year are celebrating the 100th anniversary of the California lemon industry.

During July, hundreds of decorations, including an acre of lemon trees from California, will set the theme for the store's test. And hardly a department in the store will be without lemon-yellow colored merchandise.

Ad Agency Commissions

Will Get a Going-Over

A 10-man study committee appointed by the Assn. of National Advertisers is set to give the subject of advertising agency compensation a thorough going-over.

The committee's appointment follows the Justice Dept.'s successful antitrust attack on the advertising business' time-honored agreements on the standard 15% commission paid to agencies by advertising media (BW-Feb.11'56,p74).

Kraft Food Co.'s director of sales and advertising, John B. Laughlin, heads the ANA study committee.



"Attention, everybody!

The Civil Defense drill's starting"

Here's a split-second problem for a public school, when a city-wide Civil Defense test happens to coincide exactly with dismissal time.

Five hundred youngsters making bedlam in the halls. The switchboard and public-address system just locked up for the night. And, in the principal's office, one man hears the C. D. siren and knows it's up to him to get everybody's attention at once.

No problem at all, if his school happens to have a Stromberg-Carlson communication system with its emergency announcement feature. He'll just pick up that distinctive red telephone on his desk and press the button. Instantly—even though all "regular" communication is turned off—a piercing signal is heard throughout the building and the telephone handset becomes a microphone for the principal to

use in giving his message.

Such convenience is typical of the features built into all our systems. Complete intercom telephone service to as many as 165 rooms . . . FM or AM radio programs "piped" to all locations or a selected few . . . provision for tape recording and play-back . . . anything from nap-time music in the kindergarten to rock-and-roll in the gym is available at a student-operator's fingertips.

Maybe "Johnny" can or can't read. But, with the sort of help that modern audio engineering provides he sure can listen—and learn by doing so. That's the sort of role we are proud to play in helping to shape a bright and happy future for modern, fast-moving America.

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In Washington

TVA Scores a Big Victory On Financing New Additions

A House-Senate conference committee finally broke through a deadlock and voted to let Tennessee Valley Authority use its own revenues to increase the generating capacity of its power plants.

The bill is expected to win final Congressional approval. What makes the measure important is that it would enable TVA to go ahead adding new capacity to its plants without prior Congressional consent.

The crucial issue in conference was whether to accept (1) the Senate's appropriation—in line with an Administration request—for \$3.5-million to install a new generating unit at TVA's John Sevier steam plant, or (2) a House proposal giving TVA authority to construct additional units out of its own revenues. The House balked at voting the appropriation on the grounds that it would not be needed if TVA had the authority to use its own revenues.

In conference, Sen. Allen J. Ellender (D-La.) sided with seven Republicans to produce an 8-to-8 stalemate that lasted for a month. The breakthrough came when a Republican—Sen. Milton R. Young of North Dakota—voted for the House version at the urging of Sen. Albert Gore (D-Tenn.), TVA's most ardent advocate.

Once this legislation is out of the way, the next big TVA issue will be a proposal to permit the agency to issue revenue bonds to finance all the power needs in its present service area. The Administration has favored this, with some restrictions. If such a law doesn't pass this year, it's sure to stir up a lively controversy next year.

Senate Puts Through a Bill On Federal Flood Insurance

Chances for a federal flood insurance are brighter this week now that the Senate has approved a bill to set up such a program. Next step is for the House Banking & Currency Committee to thrash out a bill it can accept—out of the 44 measures it has to consider.

The Senate's measure sticks close to flood damage only, whereas the House versions also cover damage from such things as atomic blasts and other types of disasters.

The bill passed by the Senate creates a new agency to handle the program. It would issue policies and re-insure policies of private insurance companies. The agency could cut its fees to companies to 60% of a schedule of "estimated rates" figured as far as possible on an actuarial basis. That would mean a subsidy of 40%. Total face value of insurance to be written is limited to \$5-billion, plus an amount equal to the fees collected.

The maximum insurance for any one person or company would be \$250,000. For dwellings, the maximum would be \$10,000—for the house and everything that

goes with it. Under a "deductible" provision, the government needn't pay the first \$100 of any loss, nor 5% of the rest of the claim.

The House committee isn't likely to get to work on a bill until mid-June. It has other business—including housing legislation—that has to be disposed of first.

Security Rules Eased For AEC Employees

The Atomic Energy Commission, one of the most sensitive government agencies, has eased up a little on security rules covering its employees.

The rules are still tough, but AEC is putting more emphasis on common-sense appraisal of security information. The agency's security officers no longer will be allowed to accept secret accusations against an AEC employee without thoroughly questioning the accuser. This still does not meet the one big objection of critics—an accused employee is not permitted to confront the secret informant.

All other witnesses with information pertaining to a security charge, however, are liable to summons, confrontation, cross-examination, and even testimony under compulsion—if the hearing board so desires.

Hearing boards also are advised under the new rules to go easier on findings of "guilt by association," although in cases of reasonable suspicion such findings undoubtedly will continue.

Fed Takes Broad Approach In Installment Credit Study

The Federal Reserve Board's study of consumer installment credit, being conducted at the Administration's request, will be a five-part project—with four of them being handled by experts around the country. The report is expected early next year.

This is the way the study is shaping up:

- Consumers who bought new cars in 1955 and 1954 will be checked on their occupation, financial condition, family status, and how the car purchase was financed. National Analysts, Inc., will do the job, assisted by Retail Credit Co., Atlanta, Ga., and R. L. Polk & Co., Detroit.

- New and used car dealers will be surveyed on their financial problems and methods of financing auto purchases. George Mitchell, vice-president of the Federal Reserve Bank of Chicago, will be in charge.

- Consumers and suppliers of consumer credit will be canvassed for their opinions on the need for government controls on installment credit. George D. Bailey, Detroit accountant, has been retained as a special consultant on this part of the project.

- A conference of consumer credit experts will be held by the National Bureau of Economic Research to round up current theoretical opinion.

- The Fed will make its own review and analysis of consumer credit, its history, and the pros and cons of government regulation.

Parts Makers Prepare for Turbine

● Major auto parts makers try to protect their corporate lives by developing parts for the new power-plant.

● They're delving deep into ceramics and metals research and coming up with some promising results.

● But competition and cost squeeze are hurting; their ranks may be thinner when Detroit turns to turbines.

There's excitement mixed with a heavy load of trepidation on the fringes of the automobile industry these days. In the laboratories, the guarded back-room workshops, and the executive offices of some 400 different companies in a 300-mile radius from Detroit, the men who supply parts for the auto industry can feel the breath of radical change on the backs of their necks. It's warming them one minute, chilling them the next.

The impending change responsible for their mercurial mood is the replacement of the conventional, reciprocating auto engine by the gas turbine. Most auto parts makers reckon this change inevitable, though they don't see it coming quite so soon as some others do (BW—Oct. 22 '55, p83). "Maybe a decade, at least," they say.

• **Preparations**—All the same, today, while their plants are working on components for conventional auto engines—pistons, camshafts, spark plugs, valves, radiators, carburetors—the parts makers' backroom men are getting deeper and deeper into research and development of parts for the gas turbine engine.

That research and development work is what gives many of the auto parts makers the feeling of warmth and excitement about the impending change to turbine-powered autos.

Yet, while they're busy with that work, they know that the change they're preparing for is likely to hurt some among them badly. The well-entrenched auto parts makers guess that when turbine power becomes standard in cars, some of their more recent rivals will either have to get into the production of parts for other industries, or fold up and quit.

And that's what gives the whole industry its twinges of chilly apprehension, despite the effort it's putting into developing parts for gas turbine auto engines.

That effort is spread fairly wide through the 400 companies that make parts for Detroit's auto plants. It spreads

over, too, into some of the group of about 2,000 smaller companies that, for the most part, produce components for the parts makers.

I. Plans Take Shape

What's probably the most radical plan for realignment of a parts maker's operation is being prepared at Champion Spark Plug Co., Toledo. It's only reasonable that this should be so, when you consider that Champion makes nothing but spark plugs for the auto industry—and that the gas turbine engine contains no spark plugs at all.

• **Work on a Cousin**—At first glance it might seem that Champion, with all its eggs in one basket, has a dimly grey future. But in the late World War II days, Champion, backed by war orders, moved into the gas turbine parts producing business. Since the war, it has kept producing parts for airplane gas turbine engines, and its forte in this field is the cousin of the spark plug—the gas turbine fuel igniter.

Now its researchers are developing auto-type turbine fuel igniters, probing into the field of ceramic materials that are used to protect the metal parts in the hot end of a turbine engine. They have developed a method of bonding ceramic materials to metals, solving what was long considered a major problem for turbine engine builders.

Along with many other researchers, they're looking for a ceramic material that at high temperatures will expand at the same rate as the metal it covers. This latter search, if successful, could speed the day for mass production of turbine-powered autos by permitting engine builders to put cheaper metals, coated with the ceramic material, in places where they now must use expensive and often hard-to-get metals.

• **End of a Policy**—But all this work, Champion feels, is no complete answer to the problems it will face when the auto turbine engine is mass produced. The reason is clear enough: Present auto

engines use six or eight spark plugs; the turbine auto engine uses only one fuel igniter. Though each fuel igniter may cost as much as six or eight conventional plugs, the idea of sticking to its old one-product policy has little appeal for the company. And so, Champion, facing up to the impending change, has set its researchers looking for new parts for the hot end of the turbine engine into which it can diversify.

• **Wider Operator**—Even for one of the auto parts industry's most widely diversified leaders, Thompson Products, Inc., Cleveland, the specter of change has spurred research and development of gas turbine parts. Thompson Products makes pistons, rings, valves, valve tappets, water pumps, and cylinder liners for conventional auto engines. Again, none of these parts is used in a gas turbine engine. But Thompson, too, has been working on gas turbine engines for airplanes since World War II days.

Thompson Products won't say just how far its research engineers have gone in preparing for the day when an engine builder calls on them for parts for an auto gas turbine. But it does admit it has "played around" to the extent of producing a number of parts that it knows will be needed for the engine.

Like Champion's researchers, Thompson's are following up every lead they can find in their hunt for ceramics or alloys that will allow them to use cheaper metals. Right now, they're working on a promising alloy of iron and aluminum.

Thompson's work is probably ahead of others in the field. But the difference is largely one of degree.

• **Gathering a Team**—There's another Cleveland auto parts manufacturer, Eaton Mfg. Co., that has lately jumped into work on the gas turbine auto engine. It has been, and still is, concentrating largely on its production of valves, valve tappets, and valve springs for conventional auto engines. But a year ago it bought up a 12-year-old concern, Frederic Flader, Inc., North Tonawanda, N. Y. This outfit's founder had been one of the chief research engineers for a leading airplane engine maker, knew the airplane turbine inside-out. Eaton has manned the Tonawanda plant with 55 scientists and engineers.

Eaton says it has come up with new ceramic materials that look promising for the auto gas turbine, that some unique ideas have been built into a turbine compressor, that the engine controls it has already produced are functioning satisfactorily in tests, and that



For new designs . . .
or for solving old problems

* Hose of Du Pont TEFLO, manufactured by Resistoflex Corporation, Roseland, New Jersey, is used in the cementing machine of Compo Shoe Machinery Corporation. It is virtually "as good as new" after three years' service. The best hose formerly available lasted no more than one year.

The properties of Du Pont TEFLO[®] are unmatched by those of any other material

Engineers, planning for the future, utilize the unique properties of Du Pont TEFLO tetrafluoroethylene resin to satisfy the requirements of new designs. TEFLO not only helps solve radically "new" problems (extremes of heat, pressure and corrosion), but in doing so, often solves some "old" industrial problems, as well.

For example, modern jet aircraft require tough, flexible lines, able to withstand high operational temperatures and handle corrosive fuels and lubri-

cants. The very same hose of Du Pont TEFLO that solved this problem proved to be the solution to the old industrial problem of handling corrosives, adhesives and steam.

Such hose is at work today at the Compo Shoe Machinery Corporation, Boston, Massachusetts. In their machines for cementing shoe soles and bottoms, the flexible hose utilizing TEFLO transmits adhesives from the storage pot to the nozzle. Users report the hose "as good as new" . . . even after

three-year use. The best hose, formerly available, lasted no longer than a year.

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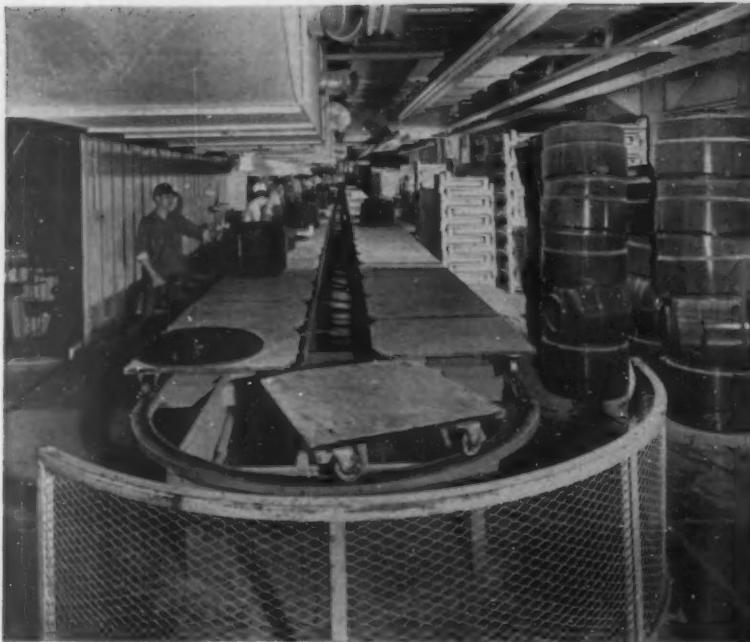
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Four Paint Lines Lead Into This One Inspection Conveyor A Dozen Lines Lead Out

Inspection is centralized and mechanized in this plant. Painted parts arrive on four separate MHS overhead conveyors and are transferred to this continuous pallet conveyor, engineered and built by MHS. After inspection, parts are sorted and rehung on the proper one of more than a dozen overhead storage and delivery conveyors feeding the assembly line.

The single inspection station means lower costs by elimination of duplicated facilities and better use of manpower, improved quality control, and more positive regulation of parts in transit.

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its engineers have developed an efficient new system for transferring power from the turbine to the rear axle of a car.

II. Where Life Is Hectic

Not all this rapid-fire research and development work and scrambling to get out in front among the auto parts makers has grown out of the anticipated revolution in auto engine building. The industry has long been hectic and wildly competitive. An auto parts maker knows that it's not just the next-door producer who is a competitor—his customer, the auto industry, can suddenly become a competitor, too.

This threat that the customer may switch sides hangs just as menacingly over the industry today, as it prepares for the turbine-powered auto age, as it has through the period of the conventional auto.

- **Pennies Can Tell**—A cost rise of a penny or two can wreck an auto parts maker, or even damage his whole industry. Plainly, a 1% rise in the cost of a \$50 auto part raises the bill of an auto maker turning out 2-million cars a year by \$1-million. So the question "Do we make or do we buy?" is always before the auto manufacturers. The auto maker thinks, too, of whether his production lines would be stopped if his parts supplier failed to deliver. He thinks of his plant capacity also—if he has excess plant and labor, he'll still stay a little ahead by using that plant and labor to make parts, even though an independent parts supplier might be able to sell them for a little less.

Around Detroit, many auto parts makers are finding their costs going up. Most of those parts makers last year contracted to pay their employees supplementary unemployment benefits, and that made their direct labor costs precisely the same as those of auto makers.

- **Casualties Grow**—Casualties in the parts making industry have been increasing for the last five years. Just recently, two Detroit parts makers, Motor Products Corp. and Vinco Corp., said they'll close this year.

Other parts makers, though, have been finding a way to salvation through diversification, and supplying parts for other industries.

- **Dark Prediction**—Even so, the well-entrenched auto makers say that a part of their industry is bound to be lopped off if the gas turbine engine becomes the standard power-plant of Detroit's cars.

These bigger suppliers learned that success in their industry depends not only on flexibility and peak efficiency of plant and equipment, but on dynamic research and development, as well. And now they're trying harder than ever to apply that lesson. **END**

40-ft-long Stoker-fired Incinerator

One of four 250-ton-per-day C-E Stoker installations in New York's South Shore Incinerator Plant, Brooklyn. A duplicate installation is on order for the city's Greenpoint Plant, Brooklyn, and three similar units are now being installed at the Manhattan E. 73rd St. Plant. These plants were designed by the Department of Public Works and are operated by the Department of Sanitation.



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REFUSE — it's a big problem for cities and for industries, too. Usually, the best way to get rid of it is to burn it. That's what New York City does — using enormous stokers like the two shown in the incinerator furnace above, which can burn nearly two hundred and fifty tons of garbage and all kinds of refuse a day.

Four C-E stoker-fired incinerators like this went to work in the vast New York refuse disposal system two years ago. Since then, seven similar units have been ordered.

These stokers are specially designed to meet a special problem. But stoker units like this can burn mountains of **industrial** wastes, too. Moreover, combined with a waste heat boiler, they can be used to generate steam for space heating or process work.

Other "waste" materials are also handled at a profit in C-E equipment. Bagasse — sugar cane refuse — is a thoroughly practical fuel, when it's burned in a specially-designed C-E Stoker-Boiler unit. Bark and wood chips, too, are more valuable fuels — now that Combustion has designed equipment to utilize them efficiently.

Even vast quantities of sewage sludge are dried to a saleable fertilizer, or burned to a sterile ash, in C-E Raymond Flash Drying Systems.

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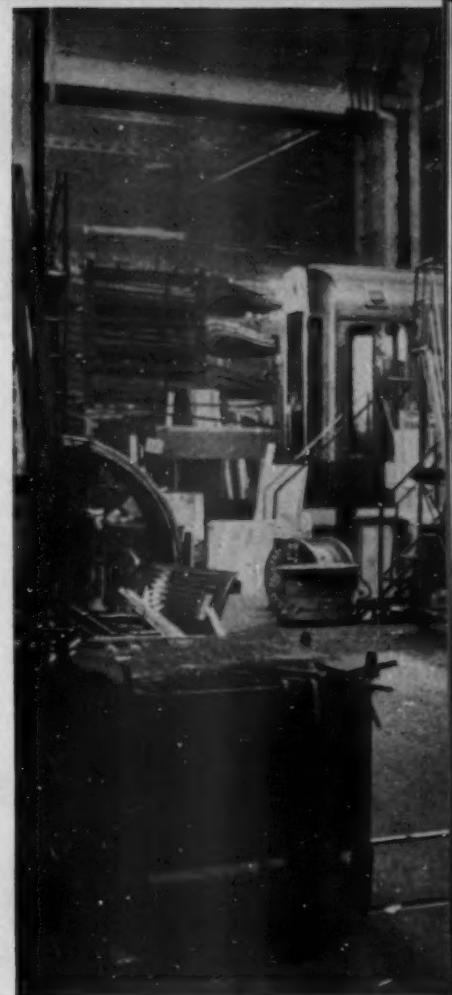
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Budd's answer to lightweight competition from the other railroad car builders is not just one new passenger train but several—trains that are heavy and light, high and low.

STILL UNDER WRAPS is Budd's lightweight train. It contains a number of innovations to reduce weight that have not yet been used by competitors.



TWO NEW CARS being made by Budd are

Designing

The last of the four builders of new passenger trains finally put its latest equipment on display this week. But the builder, the Budd Co., got to the exhibiting stage with the most—three new trains.

Two traditional competitors, ACF Industries and Pullman-Standard Car Mfg. Co., and a newcomer in the field, General Motors Corp., already had unveiled new trains (BW-Mar. 24 '56 p34). All their entries—GM's Aerotrain, ACF's modernized Talgo, and Pullman's Train X—concentrated largely on cutting passenger train weight: All are well under half the weight of older passenger equipment.

But only one of Budd's new trains—the tubular train, which it will deliver to the Pennsylvania RR on June 13—really fits into this category. A fourth Budd train, still very hush-hush, also will be a lightweight.

• **Multi-Train Approach**—Yet Budd expects all its new trains to compete suc-



lightweight, low tubular train (foreground) and towering hi-level coach. Like standard car in background, they are 85-ft. long.

the Right Car for Right Railroad

cessfully for the same market for which the lightweight trains were designed. All the train builders hope for larger orders as the railroads cast around for new equipment that will help curb mounting passenger service deficits. Budd alone has refused to put all its chips on lightweights as the only kind of trains the roads will order for this purpose.

The company simply does not believe that a single type of new train will solve the passenger service problems of all the railroads. Rather, it believes that different groups of railroads need—and will buy—different types of equipment.

This near heresy prompted Budd to bet on two other types of trains along with its own lightweight.

- Hi-Level—One of these, the so-called hi-level being built for the Santa Fe, is about as far as you can get from the lightweight concept. The two-level coach making up the train, which puts



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"...there is no single solution for all the railroads,' says Budd's president . . ."

STORY starts on p. 68

passengers on the top deck with lavatories and auxiliary equipment dropped below them, is strictly a luxury job. Budd won't talk about actual costs, but spokesmen admit the car will run the railroads more than twice the price of old-type passenger coaches.

- **Hot Rod**—You can't really compare the Budd Hot Rod, which has been purchased by the New Haven, with either the lightweights or the hi-level. It's an underslung (5 in. lower) version of the older Budd RDC (Rail Diesel Coach), with other refinements aimed more at adding riding comfort than cutting weight.

- **Tubular**—The tubular train, whose general design was specified by the Pennsy, is a true lightweight—well under half the weight of old coach trains. But unlike competitors' models, Budd's sticks to the standard 85-ft length. So it looks more like a standard coach, even though it is 19 in. lower and has an underslung section in the center of each coach.

The lowered centers of the cars account for much of the weight saving in the tubular train. The center sill, a heavy steel supporting beam that runs under the entire length of standard coaches, has been replaced by four sturdy, but lighter, supports under the tubular coach.

- **Difference in Philosophy**—These new trains point up Budd's major points of disagreement with the rest of the trade:

- Different kinds of equipment for different railroads.

- Conventional-length coaches.

- No locomotives—buyers have to supply their own. The apparent exception, the Hot Rod, is actually a train of six self-propelled coaches, each with its own power source. Locomotive cabs have been added at each end largely for the convenience of the crew.

This is how Pres. Edward G. Budd, Jr., explains the philosophy behind his company's multiple-train answer to the passenger troubles of the railroads:

"We are convinced there is no single solution for all the railroads. The problems are entirely different for many of them. Those that serve densely populated areas and have comparatively short runs are most interested in the highest possible acceleration, so they can reach top speed in the shortest time, and good deceleration. Comfort is important, but a good coach seat is sufficient."

"On the other hand, railroads with long hauls, like those that cross the West, aren't much interested in ac-



Who chained the Executive Vice President to his desk with a lot of corroded metal?

Corrosion is very much the business of top-management. Take the Executive Vice President. Everything in the company is his concern. And many a night he's chained to his desk by problems that start with corrosion in the plant.

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	Noland Company, Inc.
	Poe Hardware & Supply Co.
	Stewart Supply Co.
Spartanburg	Sullivan Hardware Co.
	Hall & Company, Inc.
Sumter	Noland Company, Inc.

◆ TENNESSEE

Bristol	Mitchell-Powers Hardware Co.
Chattanooga	Mills & Lupton Supply Co.
Jackson	Southern Supply Co.
Kingsport	Greene Hardware & Supply Co.
Knoxville	Tennessee Mill & Mine Supply Co.
Memphis	E. C. Blackstone Co.
Nashville	N. O. Nelson Co.
	Buford Brothers, Inc.
	W. A. Case & Son Mfg. Co.
	Noland Company, Inc.

◆ TEXAS

Austin	K. M. Supply Company
Dallas	N. O. Nelson Co.
El Paso	Zork Hardware Company
Fort Worth	Well Machinery & Supply
Houston	Corbett Co.
	N. O. Nelson Co.
Lufkin	Supply Div. of Lufkin Const. Co.
Marshall	E. B. Hayes Machinery Co.
Paris	Robert L. Swain Co.
San Antonio	San Antonio Pipe & Supply Co.
Texarkana	Buhman-Pharr Hardware Co.

◆ UTAH

Salt Lake City	N. O. Nelson Co.
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◆ VERMONT

Burlington	The Blodgett Supply Co., Inc.
Rutland	Canney-Plus, Inc.
St. Johnsbury	Charles Millar & Son Co.

◆ VIRGINIA

Charlottesville	Noland Company, Inc.
Danville	Hajoca Corporation
Lynchburg	Barker-Jennings Corp.
Newport News	Noland Company, Inc.
Norfolk	Hajoca Corporation
	The Henry Walk Company
Richmond	Hajoca Corporation
	Industrial Supply Corporation
	Noland Company, Inc.
Roanoke	Southern Railway Supply Co.
Waynesboro	Graves Humphreys Hardware Co., Inc.

◆ WASHINGTON

Seattle	Steam Supply & Rubber Co.
Spokane	Northwest States Supply Co.
Tacoma	Sullivan Valve & Engineering Co.
Walla Walla	Paramount Supply Co.
	Drumheller Co.

◆ WEST VIRGINIA

Charleston	Osborn Machinery Co., Inc.
Huntington	Logan Hardware & Supply Company
Logan	Logan Hardware & Supply Company
Winston	Damer Hardware & Supply Co.
Wheeling	Trimble & Lutz Supply Co.

◆ WISCONSIN

Appleton	Murphy Supply Co.
Green Bay	P. H. & I. Supply Co.
Kenosha	W. A. Roosevelt Co.
LaCrosse	Automatic Temperature Supplies, Inc.
Madison	Rundle Spence Mfg. Co.
Manitowoc	William Rothrock & Sons Co.
Milwaukee	F. R. Dinger
	B. Hoffmann Mfg. Co.
	Div. Grinnell Company, Inc.
Nekoosa	Rundle Spence Mfg. Co.
Oshkosh	Nekoosa Fdry. & Mchne. Works, Inc.
Racine	Bottis Bros.
Sheboygan	Thomas Supply Co.
Watertown	Opthenberg Iron Works
	Kusei Dairy Equipment Co.

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products sell JENKINS VALVES
BRONZE • IRON • CAST STEEL • STAINLESS STEEL

Jenkins Bros.
VALVE
JENKINS
MADE

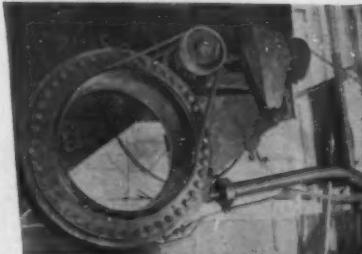
...you'll find Thermoid Rubber and Friction Products used everywhere

TIMBER HAULING



Over rough roads and treacherous grades, giant loads of timber ride safely with the help of Thermoid Brake Blocks.

LOG DEBARKING



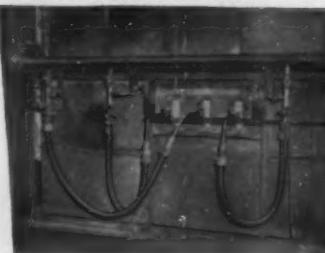
Logs move through ring driven by Thermoid V-Belts as Heavy-duty Hose supplies 1,500 gallons of water per minute at 1,500 psi.

KILN STACKING



Lumber is automatically sorted by length and carried to semi-automatic kiln stackers on long-wearing Thermoid Conveyor Belting.

CHEMICAL RECOVERY



Concentrated black liquor at 240° F. is sprayed into furnace. Thermoid Hose withstands constant flexing action.

In the Pulp and Paper Industry

... and in practically any industry you can name, Thermoid Products are on the job—delivering what's expected of them. Quality materials and versatile engineering, plus multi-plant facilities and personalized service—all are yours when you specify Thermoid.

Thermoid

Thermoid Company • Trenton, New Jersey

celeration. Passenger comfort is their greatest consideration because they have the passenger aboard for hours.

"Somewhere between these extremes are the roads like the Pennsy and the New York Central, which serve numerous population centers and have some fairly long runs, also. To them, speed and passenger comfort are both important, but to different degrees than roads with longer or shorter runs. And operating efficiency is vital. They're in trouble when the coaches they need in New York are sitting idle in Washington or Buffalo [because they lack adaptability]."

- **To Each His Own**—You can get an idea what Budd is talking about from the orders his company has received from different railroads.

The Santa Fe is buying five hi-level trains, each consisting of seven chair cars, a diner and one lounge car, for its 39½-hr. Chicago-Los Angeles run. There are only six stops on this route, so fast starts are not important. But keeping the passengers happy is—they're in for a long ride.

The new two-level coach appealed to the Santa Fe because the high seating and wide windows give the rider a maximum of scenery. Noise is cut down because of the distance of seats from the rails. In addition to housing heating, air conditioning and other equipment, the lower level affords space for additional lavatories.

The extra cost of the hi-level is not important to the railroad because passenger fares are higher for long hauls. And the distance traveled by such trains insures efficiency in usage—more than 1,000 miles per day per coach.

The New Haven is at the other extreme. Stops are frequent, many runs averaging a stop every 20 mi. or so. Routes twist in and out of cities, so curves are frequent.

The New Haven will put the Hot Rod (it's also trying a Talgo and a Train X) on its Boston-New York run, now about a four-hour trip. The Rail Diesel Coach has good acceleration, and the new underslung version is expected to hug the rails sufficiently to permit maximum safe speed on curves. Budd people are confident that it will cut an hour or so off the old running time.

- **Pennsy's Order**—The Pennsy came up with the general specifications of the tubular train, including the lowered center sections, and Budd started working out the details last year.

The result was a train pretty much tailored to the Pennsy's requirements. Front and rear entrances are at standard car heights so that there will be no problems with station platforms. Slightly inclined ramps lead down to the center of the coach from each end. Standard couplers are used between



OPERATORLESS Elevator Test by Betty Furness Shows Why:

"DOORS WON'T TOUCH YOU With Westinghouse Traffic Sentinel"

1. No more premature door closings
—Now passengers in operatorless elevators are completely free from fear of doors starting to close on them as they enter or leave the elevator.



(Note cups held against doors
by Betty Furness.)

2. Traffic Sentinel's Invisible Beams
—"sense" passenger movement, hold doors motionless until last person is safely in or out.

3. Safe...And Eliminates All Unnecessary Door Open Time —Traffic Sentinel not only inspires new confidence among passengers, but speeds overall elevator service in heavy traffic buildings —holding doors open only as long as required to allow safe, unhurried loading of cars at all floors. It is sensitive when 1 or 20 people use the elevator.

And remember, Westinghouse operatorless Selectomatic elevator systems can **cut operating costs up to \$7,000* per car per year** in new or modernized buildings. Call our nearest office for full details.

*includes wages, insurance, training, uniforms (and other costs of attendant operation)

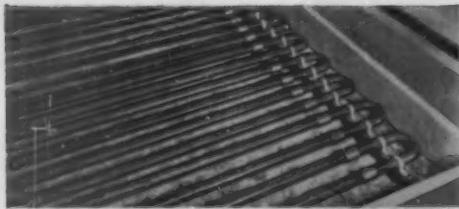
J-38780

WESTINGHOUSE ELEVATORS

Westinghouse

YOU CAN BE SURE...IF IT'S

Only STEEL can do so many



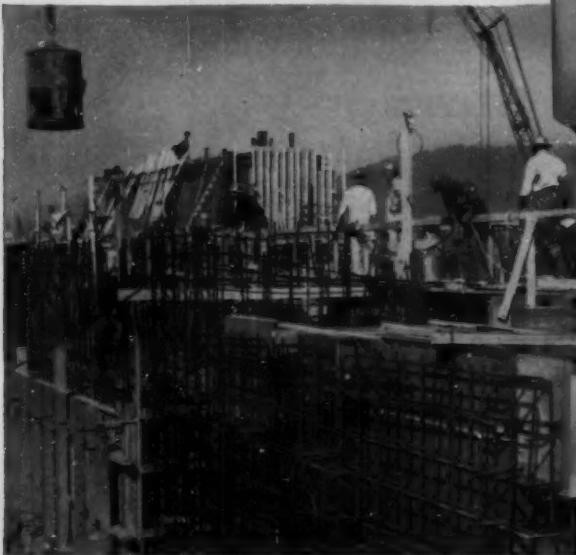
They Call It "Curling." Scottish soldiers introduced this game in Quebec, just before the Revolutionary War. The 40-pound granite stones are slid down a 140-foot sheet of ice, frequently with a "curling motion" that curves them around other stones. In the picture, members of the New Liskeard Curling Club, Ontario, sweep the ice ahead of the oncoming stone. Miles of USS National Pipe lie beneath many of the rinks, carrying the brine that freezes the ice.



jobs so well



Trailers That Won't Wear Out. It's true. No trailer made from Stainless Steel has ever been known to wear out, because Stainless is *far* stronger than other metals, and it will not corrode and weaken. The great strength of Stainless allows compact design. The trailer shown here, for example, has sides made from thin sheets of Stainless Steel, corrugated into walls that are only one inch thick. Consequently, it can carry much more cargo than ordinary trailers.



First Atomic Power Plant is being built near Shippingport, Pa. This tremendous project uses thousands of tons of concrete—all reinforced with steel bars and mesh from U. S. Steel Supply.



For Sticky, Gooey Clay. This all-steel mobile clay cart is widely used in public schools. The Stainless Steel bowl is not affected by the wet clay; and the welded steel construction makes sure of trouble-free service.



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to quality steel*

UNITED STATES STEEL

For further information on any product mentioned in this advertisement, write United States Steel, 525 William Penn Place, Pittsburgh, Pa.

AMERICAN BRIDGE • AMERICAN STEEL & WIRE and CYCLONE FENCE • COLUMBIA-GENEVA STEEL • CONSOLIDATED WESTERN STEEL

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UNITED STATES STEEL SUPPLY • Divisions of UNITED STATES STEEL CORPORATION, PITTSBURGH

UNITED STATES STEEL HOMES, INC. • UNION SUPPLY COMPANY • UNITED STATES STEEL EXPORT COMPANY • UNIVERSAL ATLAS CEMENT COMPANY

SEE THE UNITED STATES STEEL HOUR. It's a full-hour TV program presented every other week by United States Steel. Consult your local newspaper for time and station.

**the
correct
approach
in ...
GOLF
SHOES**

ACCENT ON LIGHTNESS



Pro-Shu Golf Shoes are a full pound lighter than most golf shoes . . . perfectly balanced to feel as light on your feet at the 18th hole as at the first tee. They give a lift to your step and to your game. There's genuine value in Pro-Shu, too . . . finest leathers, expert workmanship, and a tradition of over sixty-five years of building quality footwear. For your own comfort, wear the golfers' choice . . . Pro-Shu . . . the golf shoes with the accent on lightness. Available at most pro shops.

Style #970. Plain toe, three-eyelet Blucher, single sole. Fully kid lined. Phillips replaceable spikes. With or without Kiltie Tongue. Black only.

Pro-Shu Golf Shoes are manufactured by HOWARD & FOSTER CO., INC.
Brockton, Mass.

THE pro-Shu CO.

OF HARRISBURG, PA.

**Gain Extra Storage
... In Every Aisle**



RAYMOND
Electric
TIERING TRUCK

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Please send Bulletin on Raymond Tiering Truck.

- 2,000 lb. cap.
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- Have representative call.

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Material Handling Show
Cleveland—June 5-8



MODEL E2ST Telescopic, 2,000 lb. cap. Also available in 3,000 and 4,000 lb. cap.

coaches so they can be attached to older cars to form mixed trains.

The ability to mix the new cars with old ones is important to the Pennsy, which is subjected to some fairly unpredictable changes in passenger loads. Bad flying conditions at any of a number of cities, for one thing, can suddenly swamp Pennsy passenger trains.

Only hitch in this adaptability is the fact that the complete new train includes a power car, which supplies heat, lighting, and air conditioning. This reduces the weight of the coaches, but they probably would have to travel empty if they were separated from the power car.

• Weight Factor—Budd refused to compare the tubular train's weight with that of the other lightweights. One reason is that all the others are hauled by specially built lightweight locomotives. The Pennsy will use its own big electric locomotives to haul the new train between New York and Washington. Another reason is that competing lightweights have shorter cars, like Aerotrain and Train X, or sectionalized cars, like the Talgo. So there is not much basis for comparison.

However, including both the locomotive and the power car, weight runs about 1,200 lb. per seat for the seven-coach, 574-passenger tubular train. Budd is mum about the cost, probably because it is a one-shot experiment—at least until the Pennsy has tried out the new train for some months.

• More Comfort, Quiet—There are other distinct variations from competing lightweights that even the casual train rider can see. Chief of these is the four-wheel truck, which Budd alone has hung onto. For one thing, it takes four-wheel trucks to handle a car that is 85 ft. long. But there is more to it than that. Edward Budd sums it up this way:

"We feel the four-wheel trucks give a smoother ride. But wherever you have wheels, you get noise. You can prove that with a sound meter in any railroad car. In the first 10 ft. from each end of the car—the part that is over the wheels—the noise is several decibels greater than at the center. That's one reason for the longer cars. The fewer the cars, the fewer of those end-of-the-car noise centers you have."

"But we feel the long car also gives you more efficient use of space. It gives you more room to work out things like locations of seats and lavatories and baggage space."

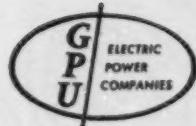
So you can bet that, whatever else it is, the mystery lightweight now in Budd's testing shops will be a standard length car with four-wheel trucks. And it probably will be even lighter than the tubular, perhaps than all the other lightweights. Budd people are just that smug about it. END

It doesn't always pay to "DO-IT-YOURSELF...!"



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one central source for detailed site and
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Site-Service will do your "looking" in complete confidence and without cost. Working from its up-to-date files, Site-Service selects the industrial sites or buildings which meet your exact requirements. Nothing is left to chance. You receive pictures, plans and specifications, as well as detailed data on local taxes, labor, water, utilities and other services. A trained staff does your leg-work; helps you meet the right people. So, call on Site-Service for the right site in GPU Pennsylvania and New Jersey. It's an area of more than 1200 small and middle-sized communities—all within overnight shipping to one-third of the nation's population.



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investment



CMP
RESTRICTED SPECIFICATION
COLD ROLLED
STRIP STEEL
can feed this automated line
at the high speed requirement
of the operation.

Costly new equipment is not always the sole answer to production cost problems. Often the wrong raw material may completely nullify expected savings from heavy capital investments in modern machinery.

Consider the case of one manufacturer who installed expensive new forming equipment but was unable to up production to the expected level. Material being formed was cold rolled strip 4" x .060", AISI 1050 steel processed to standard gauge tolerances (.0567" to .0632").

When **CMP** Precision Cold Rolled Strip Steel ordered to a 60% gauge restriction (.0587" to .0613") was furnished, production immediately moved up to the rated capacity of the machines and has remained there.

In addition to increased production, because of the minimization of down time, an incidental and important benefit was the increase in yield per **CMP** ton processed because rejections and out of tolerance parts were eliminated.

Careful consideration of **CMP** Restricted Specification Cold Rolled Strip Steel alternatives on the same careful basis given to your equipment investment, may point the way to similar, or larger pay-offs.

Why not check the possibilities today?

CMP Products—low carbon, electro zinc coated, high carbon, tempered spring steel, stainless and alloy.

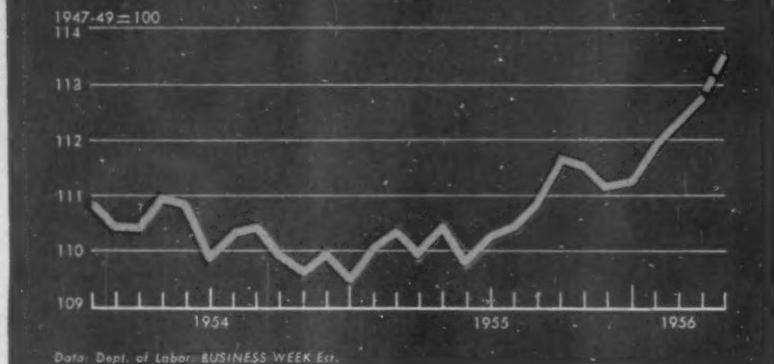
THE COLD METAL PRODUCTS CO.
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Indianapolis • Detroit • Los Angeles • San Francisco

CMP STRIP PROVIDES
MAXIMUM NUMBER
OF PRECISION PARTS
AND HELPS ELIMINATE
COSTLY HUMAN ERRORS



CHARTS OF THE WEEK

Wholesale Prices



On the Rise Again

After moving sideways for more than three years, wholesale prices have started up the hill. The upward movement has brought them to levels exceeded only in one earlier period—the first seven months of 1951, when the upward spiral was set off by the Korean War.

Here's the reason for the upturn. The earlier steadiness of the "all commodity" index resulted from a balance between divergent movements of industrial com-

modities and food prices. The rise in industrial prices that began in mid-1955 was canceled out by food's drop. But since the end of 1955, both farm product prices and processed food prices have been rising.

If the rise in food at the wholesale level continues, increases will soon show up in the index of consumer prices. Retail food prices have been a prime factor in keeping living costs steady.

Factory Hiring



No March Rebound This Year

Factory hirings failed to show their usual March upswing this year—the March hiring rate of 31 per 1,000 employees was unchanged from February. It was the third lowest March rate in the postwar period, with hiring rates in most industry groups below average. Except

for an increase in January, the rate of factory hirings has been declining since last August.

Although hiring activity usually rises moderately between February and March, the U.S. Labor Dept. reports that this year a number of industries had



Laytex® Royal Master Portable Cables



"Coal mine shuttle cars are cable killers," says chief electrician. "But see the 'U. S.' Cable under wheels of this car—it takes this punishment many times a day."



Car brings coal to loading point, and 'U. S.' Cable is reeled in until snubbing post (at left) is reached. Car runs over cable, pulls it against sharp ribs, around bends."



Note high flexibility of U. S. Laytex Royal Master in unloading operation. "We reel it in and out about 300 times a day. In every way it's the best portable cable we ever found."

"These cables last
at least 5 times
longer than any
we've ever used,"
says chief electrician
of coal mine

U. S. Laytex Royal Master Portable Cables are put together by men who know how to make a cable stand up. U. S. Royal Master "rolls with the punch" when hit. "Your cables have been on the job for 2 years, and we expect years more of service from them," says this veteran mine electrician. "It is the long-lived cable that's

been needed for many years in the coal industry."

U. S. Laytex Royal Master Portable Cables are obtainable from your "U. S." branch, distributor, or by writing to United States Rubber Company, Electrical Wire and Cable Department, Rockefeller Center, New York 20, N. Y.



Electrical Wire & Cable Department

United States Rubber

**there's a limit
to what
even good men
can take**

What gets your best men down? Not the orders fought for and lost. Good men take those in stride.

What *really* hurts are the orders lost without a fighting chance to land them. And unless your catalog is immediately and conveniently accessible to all your good customers and prospects, your salesmen are *surely* losing too much business they never have a chance to get.

Research in industrial selling proves that catalogs are the most important factor in getting invitations to compete for an order. Research proves, too, that calls by *invitation* increase the chances of getting the order by over 300%, on the average.

These stark facts make the questions in the adjoining column very important ones for you to answer . . . no matter how effectively you think your catalog is working for you now.

(S) Sweet's Catalog Service
a division of F. W. Dodge Corporation
119 West 40th Street, New York 18, N. Y.



How effective is your catalog procedure?

Careful answers to these questions will tell you. A "no" to any one of them is good reason to review your entire catalog program.

- 1. Do you have a tested system for making sure your catalog reaches the important buying influences for your products...in the companies with volume buying power?**

yes no

(Sweet's market-specialized Catalog Files are distributed to the companies that have over 80% of the total buying power in the industries these Files serve. Individuals who receive them are continually checked for their buying influence.)

- 2. Does your present system provide for the immediate distribution of your catalog to every good, new company that comes into your market?**

yes no

(With daily access to Dodge reports on new plant construction, plus continuing market analysis and field research by its distribution staff, Sweet's spots potential new sources of business immediately; distributes appropriate Catalog Files to them as soon as their buying power is known and qualifies them.)

- 3. Do you know how many of the men who have received your catalog have kept it, and have filing systems which make it easy for them to find and use it?**

yes no

(Catalogs bound, indexed, and distributed in a Sweet's File are always easy to find, cannot be misfiled or lost.)

- 4. When your customers and prospects want to compare products, preparatory to calling in possible suppliers, does your system make it reasonably certain that your catalog can't be overlooked?**

yes no

(Sweet's binds the catalogs of comparable products next to each other, indexes each one for easy reference. This minimizes the chances that any suitable product cataloged in a Sweet's File will be overlooked when ready buyers are searching for the answer to a need.)

- 5. Are you sure that all of your important customers and prospects have your current catalog?**

yes no

(Sweet's distributes new Catalog Files each year. Every user of a Sweet's File is therefore certain that each catalog bound into his Sweet's File provides him with the up-to-date and correct buying data upon which he can rely.)

- 6. Has your catalog been prepared to give your customers and prospects exactly the kind of buying information about your products that they should have...and will it logically lead them to take the next buying action you want them to take: call in your salesman or distributor; write to you; or specify your product?**

yes no

(Sweet's has been designing and producing market-specialized, action-evoking catalogs for fifty years...has had notable success in doing so...designs and produces more manufacturers' catalogs, by far, than any other company in the world.)

There is a Sweet's Catalog Service office near you. A call or letter to any one of them will bring you prompt and thorough help in making sure your catalog...its design, production, and distribution...results in more orders for you at the lowest possible cost.

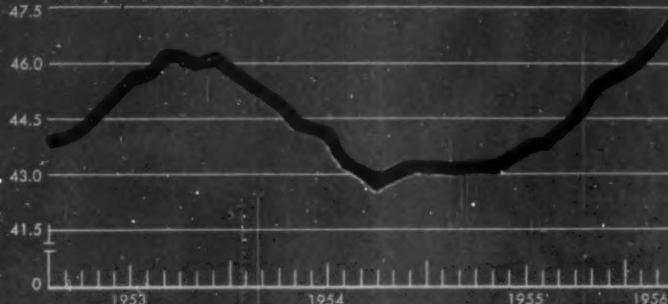


either smaller-than-usual increases or contraseasonal declines. Extremely bad March weather was a factor in the small increase in lumber. In transportation equipment, the hiring rate was below

seasonal average, despite the rise in recalls of some laid-off automobile workers. In tobacco, the drop in hiring followed an unusual February gain. Electrical machinery and apparel also declined.

Manufacturers' Inventories

Billions of Dollars, Seasonally Adjusted



Data: Dept. of Commerce

Time for Adjustment?

An inventory adjustment may be coming this year. After piling up for 11 months, business inventories now stand well above the peak reached in August, 1953. Inventories held by manufacturers at the end of March, after adjustment for seasonal variation, reached an all-

time high for any month. They were 1.3% higher than a month ago, 9.5% above March, 1955, and 2.4% over the August, 1953, peak.

When the adjustment in inventory levels does come it's bound to have some restraining influence on business activity.

Hotel Room Occupancy

Percent of Rooms



Data: Horwath & Horwath

Higher Rates, More Empty Rooms

The hotel business has been out of step with the general postwar march of prosperity that other businesses are enjoying. Occupancy of hotel rooms reached a 14-year low in 1955, according to Horwath & Horwath, hotel accountants. The ratio was 72% last year, compared with a high of 93% in 1946.

The operating ratios cover 100 hotels in 50 cities.

To offset this decline, room rates have been raised every year. In 1955, the average room rate was \$7.50; in 1941, it was \$3.39. But the result is only a small increase in the average revenue per available room.



COMPANIES

When Three Bosses

Dig it, Load it, Stack it ...
with **ONE** tractor
plus rugged wagner equipment

Around every industrial plant there are hundreds of loading, digging and materials handling jobs. You can do them all with one tractor and rugged Wagner tractor equipment. Whatever the job, there's a quickly-mounted Wagner attachment that cuts time and labor costs. Prove it to yourself by calling your nearby Wagner dealer.



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BACKHOES cut
costs, increase profits too. They make
short work of digging footings, sewer,
gas, power trenches, graves — hundreds
of other digging jobs

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Send me complete information on Wagner Tractor Equipment for a
Tractor.

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Company _____
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"WAGNER BUILT" MEANS
"BETTER BUILT" FOR OVER 100 YEARS



Fill One Vacant Chair

Many thought Chicago Tribune would slip without Col. McCormick—but new triumvirate below reports its best year ever. They hew to his line—but change it too.

Next Monday—May 21—stockholders of the Tribune Co. will find out what many have been wondering for the past year—how the Chicago Tribune and its empire of subsidiaries have made out since the death of Col. Robert R. McCormick on Apr. 1 of last year.

The Colonel handed down his one-man rule to three executives of the newspaper. The stockholders—a small group in this closely held company—will learn of the changes the triumvirate has made. They'll hear that the Tribune, both as a newspaper and as a corporation, had the best 12-month period in its history.

Just how much the company makes and what it is worth is a secret—but a new national record of more than \$63-million in advertising revenue in 1955 gives you an idea of the trend. Circulation still isn't back to the million of World War II days, but for the two years, each month has been ahead of the same month the year before.

• **Ruling an Empire**—In leaving control of his paper and empire to three 30-year men who had risen up through the ranks, McCormick passed over the scattered descendants of his grandfather, Trib founder Joseph Medill. The new management consists of Chesser M. Campbell, J. Howard Wood, and

TOP BOSS now is publisher and president Chesser M. Campbell, who came up through advertising.

W. D. Maxwell—respectively publisher, general manager, and editor.

McCormick ran the Trib with an iron hand for 45 years. During this time, it grew from a third-spot Chicago "carriage trade" paper to the second biggest in the country. From the profits of this paper, the Tribune Co. built up a 14-subsidiary empire that runs the nation's top-circulation daily, the New York Daily News, as well as a radio-TV station in Chicago and WPIX-TV in New York, produces 1,200 tons of newsprint a day, operates a fleet of 11 major vessels and hundreds of small ones, and dabbles in mining. Annual business exceeds \$260-million.

The Chicago Tribune, self-hailed as the world's greatest newspaper, accounts for only one-third of this figure, but it's undoubtedly the core as well as the origin of the empire. Chesser Campbell, McCormick's successor, says, "To be president of the Tribune Co. is nothing, unless it's coupled with being publisher of the Tribune." Evidently, McCormick felt this way, too.

I. Breaks With the Past

The new management talks at length about continuing the Colonel's policies, but several marked deviations have

NO. 2 BOSS, general manager J. Howard Wood, began as reporter, then went to the business side.



EX-BOSS Col. Robert R. McCormick's office, unchanged since death, testifies to his continuing influence.

popped up already. First was the dropping of McCormick's simplified spelling (frate for freight, foto for photo, and so on). This was done, the Trib said in an editorial, at the request of schoolteachers trying to teach spelling.

Early this year, the Tribune recognized the U.S.S.R. to the extent of sending a reporter to Moscow. But the Trib called the move an experiment, admitted it wasn't sure this was right.

• **Corporate Switches**—On the corporate level, two significant breaks with McCormick's business philosophy have occurred in the past three weeks. The Colonel always expanded his empire on a cash-on-the-line basis, financing through cash reserves, and he always developed new properties rather than purchase going concerns. Both these tenets were broken in the past month.

The Trib announced May 7 that it

NO. 3 BOSS editor W. D. Maxwell, is guided by basic McCormick policies he voiced for many years.





GENERAL MOTORS LEADS THE WAY—



*You can count on
more earning power*

*in taxicab service
with Delco-Remy extra-duty
electrical equipment*

Delco-Remy produces a series of extra-duty generators with matching regulators that more than meet the heavy electrical demands of the modern taxicab. With the right generator batteries stay charged, last longer, and are protected against excessive discharge and cycling effects.

For example, big-city taxicabs equipped with two-way radio and extra lights, and often at curb idle, put big demands on electrical systems. And for this job, special Delco-Remy A.C.-D.C. charging systems designed for extra-heavy duty provide the answer. Their output is unexcelled at curb idle, and maximum output at higher engine speeds furnishes plenty of reserve to recharge batteries quickly in emergencies. Both 6- and 12-volt application packages are available.

And for suburban taxicabs with two-way radio, extra lights and smaller power-using equipment, Delco-Remy extra-output D.C. generators—single or piggy-back, 6- or 12-volt—are tailor-made for the job, providing dependable and economical performance at low initial cost.

Specify Delco-Remy extra-duty electrical equipment when you order new vehicles or re-equip present ones.

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CORPORATE YARDSTICKS

*—factors which contribute to corporate strength,
as cited by leading educators*



Dr. Richard Donham is Dean of the School of Commerce of Northwestern University, Chicago and Evanston, Illinois.

He says, "Since the only constant in business today is rapid change, corporate strength depends a great deal upon foresight. By this I do not mean crystal gazing but, rather, the development and mastery of techniques which enable management to analyze and correctly evaluate trends . . . to anticipate changes . . . and to plan and act accordingly. Management with this ability, together with the recognition and protection of human dignity and a sense of responsibility in economic, social and political areas, is one of the more important corporate yardsticks."

* * * *

American Machine and Metals, Inc. manufactures various industrial machinery and is a foremost producer of pressure and temperature-sensitive instruments. A wholly-owned subsidiary manufactures custom made fractional horsepower motors. Its mines produce manganese, lead, zinc and silver ores. Judicious diversification and careful management have promoted sound growth and mounting earning power in its 26 years of operations.

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was joining with British Aluminium Co., Ltd. in building a \$130-million aluminum smelter at Baie Comeau, Quebec, site of several Tribune enterprises. To do this, the Trib is parting with some of the stock in its wholly owned subsidiary, the Manicouagan Power Co., which furnishes power to some of the Trib's paper mills.

Remembering the Colonel's record of Britain-baiting, you can't help but notice that the first company the Tribune associates with on a joint venture is a British firm.

McCormick's second principle of expanding only through development of new properties was overlooked when the Trib put in a bid for the Cincinnati Enquirer. The bid was too low (the Trib had figured that all four bids would be too low, and that they could negotiate from there) and the paper went to Scripps-Howard (BW-May 5 '56, p104).

The new management points to this effort to show "that we're not content to just sit pat." The Enquirer, Campbell says, would have given the Tribune a place for its huge crop of rising young executives.

• **Quantity to Depth**—In another field, the shift was also marked. The Trib engaged Foote, Cone & Belding, a big advertising agency, to promote the Trib to advertisers and agencies. Reportedly, Foote, Cone & Belding was not too anxious for the account, but finally took the bit in the mouth and came out with a series of ads emphasizing the Tribune's knowledge of Chicago's buying habits.

Since efforts in this line heretofore had been limited to shouting the Trib's circulation in huge, black letters, the move is definitely a switch from quantity to depth.

• **Radio Move**—Another post-McCormick change is the break of Chicago radio station WGN from the Mutual network, announced Apr. 30. This move was Wood's doing as president of the Chicago radio-TV subsidiary. The growth of TV as a national medium, Wood says, has placed radio in the role of a local or regional medium, "where we feel it has a tremendous potential." WGN has been a local operation for the most part, anyway—it never used more than one-third of Mutual's offerings, and lately the percentage has been down to 12%.

II. Same Line, New Tone

Editorial changes in the Tribune have been subtle, gradual—and denied by management. However, the Trib's classic "straight up and down" make-up has been invaded with regularity by multicolumn heads, and employees talk of the Trib not being as somber as it used to be.

• **The Foundation**—These are surface



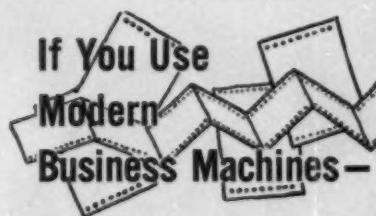
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changes, though. The fundamental editorial policies set by Col. McCormick carry over unchanged into the new regime. This is not surprising in view of the fact that Editor Maxwell had for a good many years been voicing the Colonel's views without any coaching.

Pres. Campbell is the first to realize that this continuation of McCormick's editorial line is an all-important factor in maintaining the whole empire, that the entire edifice rests on the paper's editorial strength. "If we let the Tribune down editorially," he says, "the whole empire will collapse."

To this end, the Trib gets first choice on newsprint from the Canadian mills. What's left over goes to the Daily News in New York.

• **Toning Down**—Though the Trib's heavy coverage of Washington and Springfield events continues, most readers note some subtle differences in editorial tone. Many say, for example, that the Trib these days ties only one knot in the British Lion's tail instead of two.

The editorial staff (numbering 440) was reportedly split over the extensive coverage given Margaret Truman's wedding to Clifton Daniel of the New York Times. One junior executive explained it this way: "After this Grace Kelly business, we wanted to reward a prominent girl who married an American."

There are two good reasons why you can look for more of this slight toning down of the Trib's editorial policies from the strong isolationist, anti-Britain, anti-East-Coast approach. One is that some of the most extreme views were the cantankerous opinions of Col. McCormick in his latter years, when he placed the iron curtain of socialism somewhere west of Pittsburgh. The other reason—and the more important one—is, again, Campbell's view of the Trib's editorial strength as the fundamental pillar of the empire.

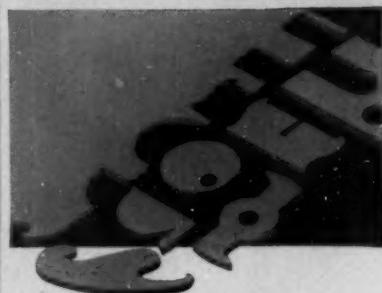
III. Inheriting a Crown

McCormick was the last to die among the four grandchildren of Trib founder Joseph Medill. There was much speculation during McCormick's later years, by the Tribune's enemies and also by some of its staunchest supporters, to the effect that the whole empire would collapse without the Colonel's leadership.

To outsiders, it seemed that McCormick was too much the dictator to groom a successor. Besides, the Colonel had no children. No company, let alone a newspaper with strong individualist views, they felt, could be run so absolutely by one man for so long, and still survive his passing. McCormick, it seemed, was the business genius, the editorial policymaker, the paper's chief promoter, and could not be replaced.

• **Preparing**—McCormick, however, had

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been laying plans for his succession ever since 1932, when he and his cousin, the late New York Daily News publisher Capt. Joseph Patterson, set up the McCormick-Patterson Trust. This trust today holds over 50% of the Tribune Co. stock.

As early as 1944, McCormick had settled on the idea of having employee-executives take over. He talked of his succession "frankly and at great length," to quote Campbell—but only to the directors.

The public was in doubt until seven weeks before McCormick's death, when he by-lined a feature article in the Trib's Sunday magazine that showed cartoon caricatures of "my three lieutenants." The purpose, McCormick said, was to "acquaint readers with the three men who stand at the right hand of the editor and publisher."

• **Veterans**—All three had come to the Trib far back in the 1920s. Campbell, now publisher, joined the Trib in France in 1921 to peddle subscriptions for the Paris edition. The following year he came to Chicago. At the Tribune his life has been solidly in advertising.

Wood, now general manager, joined the paper in 1925 as North Shore reporter, and wound up in 1932 as financial editor. In 1939, McCormick lifted him from the editorial side to make him assistant auditor and comptroller of the corporation. In 1951 he replaced Campbell as treasurer.

The present editor, Maxwell, joined the Trib in 1920 as a reporter. As sports editor from 1925 to 1930, he hired Westbrook Pegler. Then he worked his way up to editor in 1955.

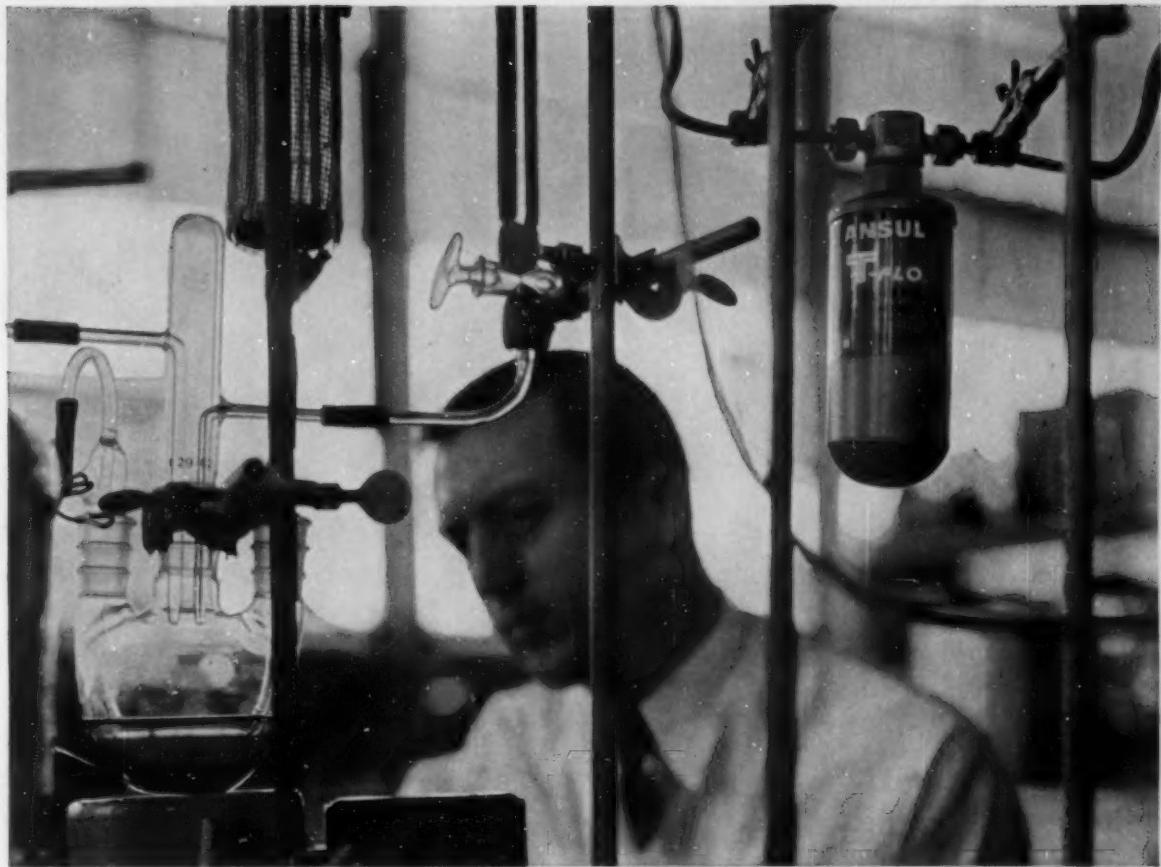
IV. Who Runs the Show?

Monolithic control was so firmly entrenched at the Tribune under Col. McCormick that it's difficult to think in terms of a triumvirate. Chicagoans both inside and outside Tribune Tower like to speculate on who really runs the show.

• **Boss**—Campbell—as president of the Tribune Co. and publisher of the paper—is definitely the boss, though there might be some speculation as to who holds the runner-up spot. It was under Campbell's direction as advertising manager from 1935 to 1949 that advertising revenue tripled.

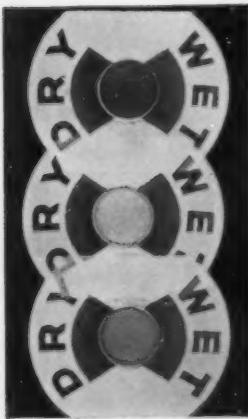
Campbell was the first non-family man to be trusted with the money as treasurer of the corporation. He held the post from 1946 to 1951.

• **United Front**—There are several indications that Wood has passed Maxwell in authority—perhaps not at the newspaper but certainly at the corporate level. When the new management took over in April last year, it was "Campbell, Maxwell, and Wood." Now



Ansul's new Moisture Control System is shown at upper right undergoing laboratory testing

New Ansul "Dry-Eye" Cuts Repair Costs for Owners of Refrigeration and Air Conditioning



The Dry-Eye, indicator on the Moisture Control System shown in top photo, is changing from blue to pink indicating moisture has entered the refrigerant.

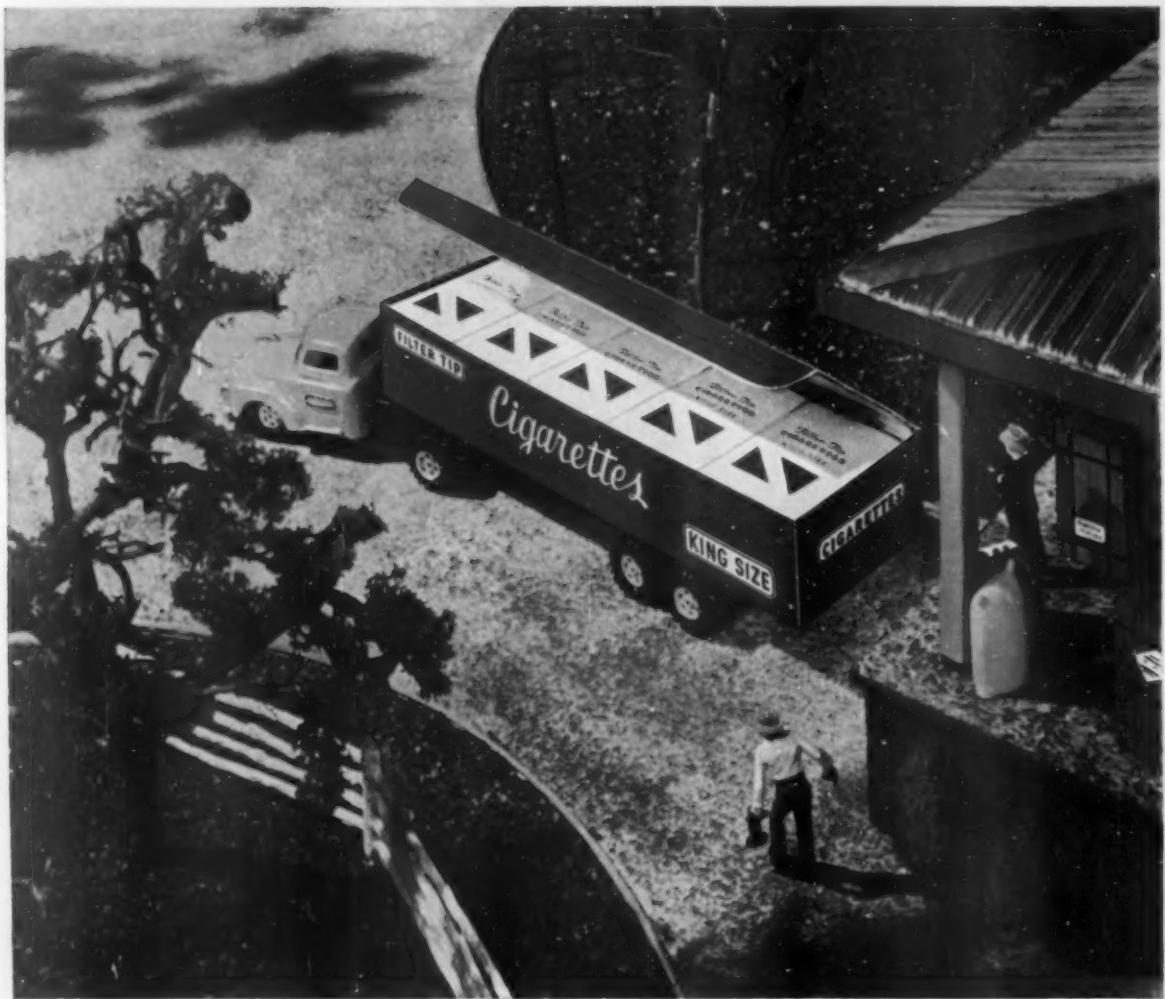
The color change taking place in the window pictured at the left signals the end of thousands of dollars in repair costs for owners of refrigeration and air conditioning equipment.

The color in the Dry-Eye fitting, a part of Ansul's new Moisture Control System, is actually telling the viewer that moisture has entered the system and if not removed will show up in repair bills in the months to come. Now, any employee working near your refrigeration or air conditioning equipment can spot moisture before it causes trouble. A glance at the Dry-Eye window tells instantly if professional service is needed to correct a moisture condition.

Your refrigeration service department or your service contractor can obtain the new Ansul Moisture Control System with the Dry-Eye from your local Refrigeration Wholesaler.

Ansul is a company staffed to solve problems of this kind—problems that are *chemical* and *mechanical* in nature. At Ansul you will find the chemist and the mechanical engineer working side by side on a common problem, each bringing to bear his own special talent to arrive at a single, practical solution. **ANSUL CHEMICAL COMPANY**, Marinette, Wis. *Ansul, pioneer manufacturer of Fire Equipment, Refrigerants and Mechanical Refrigeration Products, Industrial and Fine Organic Chemicals.*





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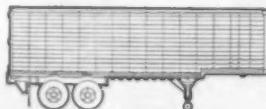
Today, Trailmobile is making this same sort of custom design available in truck trailers. We call it CID; mean-

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floors, side panels and linings that best meet *your* hauling needs. And when these components are assembled into a finished unit, you have a *custom designed* trailer that exactly fits *your* product—and you have designed it yourself.

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it's Campbell, Wood, and Maxwell.

The three do a good job of putting up a united front, however, and there's little reason to believe things might be disunited—except that the three feel it's necessary to put up the united front in the first place.

As a group, the triumvirate has fully as much power as the Colonel had. Wood and Maxwell are vice-presidents of the Tribune Co. in addition to their duties as general manager and editor. All three are directors of the Tribune Co. Campbell and Wood are directors of all the subsidiaries, but Maxwell sticks to subsidiaries in the field of communications.

All three are also trustees of the powerful McCormick-Patterson Trust, and they are the executors and trustees of McCormick's personal estate and of his charitable trusts.

• **Top of Heap**—The McCormick-Patterson Trust, through its majority ownership of the Tribune Co. stock, stands at the apex of the Tribune pyramid. It has eight trustees in all—five from the "McCormick side," including the three Tribune executives. The other two are the Colonel's niece, Mrs. Ruth Tankersley, and the head of the Canadian operations, Arthur A. Schmon. The remaining three represent the "Patterson side" in New York.

The Tribune Co. stands just under the Trust at the top of the pyramid. It operates the Chicago Tribune, and has seven basic subsidiaries, which in turn have seven subsidiaries among them.

The three chief subsidiaries of the parent company are:

• The News Syndicate Co., Inc., which runs the New York Daily News and its TV station, WPIX, Inc.

• The Ontario Paper Co., Ltd., which, with its five subsidiaries, runs the Canadian operation.

• WGN, Inc., which runs both the radio and TV stations in Chicago, and has the Chicago Tribune Press Service, Inc., as a subsidiary.

• **Outpacing the Field**—In Chicago, the Trib is not pushed too hard by competition. It has led the pack in circulation for 38 years. The Chicago Daily News, part of the John S. Knight chain, holds second place by a slim margin over Marshall Field's morning tabloid Sun-Times and the Hearst evening American.

As of last Sept. 30—the last figures covering all four papers—Tribune circulation was 928,673, the Daily News 598,802, the Sun-Times 564,829, and the American 506,417. Since then the two leaders have come out with Mar. 31 figures—935,732 for the Trib, 603,670 for the Daily News.

On the advertising side, the Trib gobbles up 55% of the advertising revenue spent in Chicago newspapers—which means it has three times as much as its nearest competitor. **END**

What's going on at Calumet & Hecla?



If he finds one minute flaw, this tube will be rejected. Such are the uncompromising high standards for repeater tubes, produced by the Wolverine Tube Division. Used in the first trans-Atlantic telephone cable, these tubes house precision-

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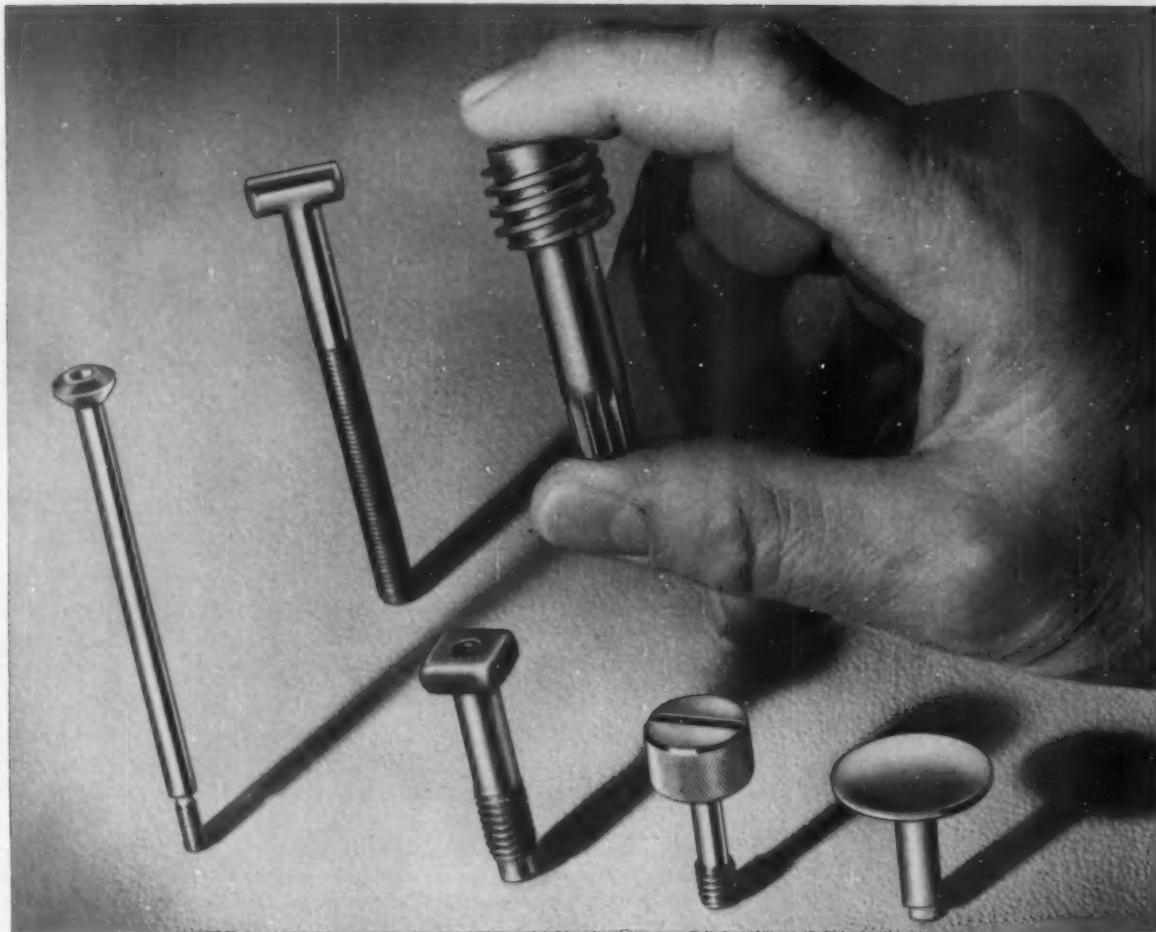
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LUTETIUM They're piling up as byproducts as industry processes monazite sand (picture) to get the thorium needed by the Atomic Energy Commission. As the stockpile grows, researchers are trying to find . . .

Jobs for the Rare Earth Metals

Renowned principally for their tongue-twisting names, the rare earth metals have long been a mystery to researchers and laymen alike. Few persons, not excluding the chemist, can even name all 15 elements that make up this peculiar group. Fewer still have cared much about them—except as laboratory curiosities or for very specialized uses.

Today, however, the growing demand for thorium by the Atomic Energy Commission is focusing fresh interest in laboratories across the nation on ways to utilize the rare earths. Main reason is that one of the chief sources of thorium is monazite sand. But in producing thorium from monazite, manufacturers get a tremendous quantity of mixed rare earths as a byproduct.

The problem of finding new commercial uses for rare earths, one major producer says, is now so great that some companies can't afford to take on contracts for thorium. Without big rare earth markets, it actually costs them money to fill thorium production obligations.

Here, basically, is where the problem lies. Some metals like gold and copper are found in nature in a pure state. Others, like iron, occur only in chemical compounds or ores. But these ores are of relatively high purity.

• **Thorny Problem**—The rare earths never occur as pure metals, and never as pure ores. When a mineral (such as monazite sand) contains one rare earth metal, it invariably contains most of the others, too. Rare earths are never found in isolation.

That is one reason there has been relatively little research on rare earth metals. It's also the reason manufacturers turning out other metals have large supplies of rare earth minerals on hand.

• **Separation Problem**—Another problem holding back research has been the ticklish matter of separating the rare earths for study—since chemically they are almost identical and behave in almost the same way.

The difference between them is limited largely to their speed of reaction time. For example, it takes the

same time for 10 grams of one rare earth to dissolve in a particular solution as it does 15 grams of another. As a result, you get a slightly higher proportion of the second rare earth metal in solution. By repeating this process over and over, you can get a relatively high degree of purity.

A reaction more commonly used to separate the rare earth metals is to cool a saturated solution slowly and allow the salts to crystallize out one at a time. Trickling rare earth solutions through ion exchange resins is the latest method of separating the mysterious rare earths—and the one that holds the greatest promise.

• **Costly**—Construction of ion exchange separation equipment is, however, a costly matter, and one that most companies don't enter into without some assurance that they can sell their end products. It sometimes takes 1-million lb. of ore to produce a few hundred pounds of any single rare earth that has to be 99.95% pure for most commercial uses. Price for this particular metal may run as high as \$15,000

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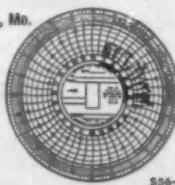
Name and Position _____

Company _____

Address _____

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We operate _____ Vehicles _____



*"... the rare earths . . .
may be the key to harnessing nuclear energy . . ."*

STORY starts on p. 96

per lb. The trouble here is that most customers don't want much at a time.

That is why Lindsay Chemical Co.—biggest of the rare earth producers in the U.S. today—processes only about half of its rare earth ore supply, and is stockpiling the rest until new markets open up. Lindsay, like other companies that have a heavy supply of rare earth minerals, is confident that such developments will be coming out of the research labs soon—but is waiting to see what happens before it makes any further major moves.

- **Major Hope**—One of the major hopes of all rare earth producers—and one they don't talk about much—is the possible future for rare earth metals in the steel and construction material industries.

For years, an unseparated mixture of rare earths (known as misch metal) has found its major market in metallurgy. Combined with various metals in comparatively small quantities, it adds some interesting properties. About 3 lb. added to a ton of steel makes the steel more workable, so that less of the expensive alloy is lost in rolling. In aluminum and magnesium, it increases strength at high temperatures—of special interest to jet engine and gas turbine manufacturers.

Such metallurgical uses, already considerable, may increase even more in the future. Molybdenum Corp. of America—which has tremendous reserves of rare earths as a result of its bastnasite mining operations—predicts that steel uses for misch metal could reach 30-million to 40-million lb. per year by 1960.

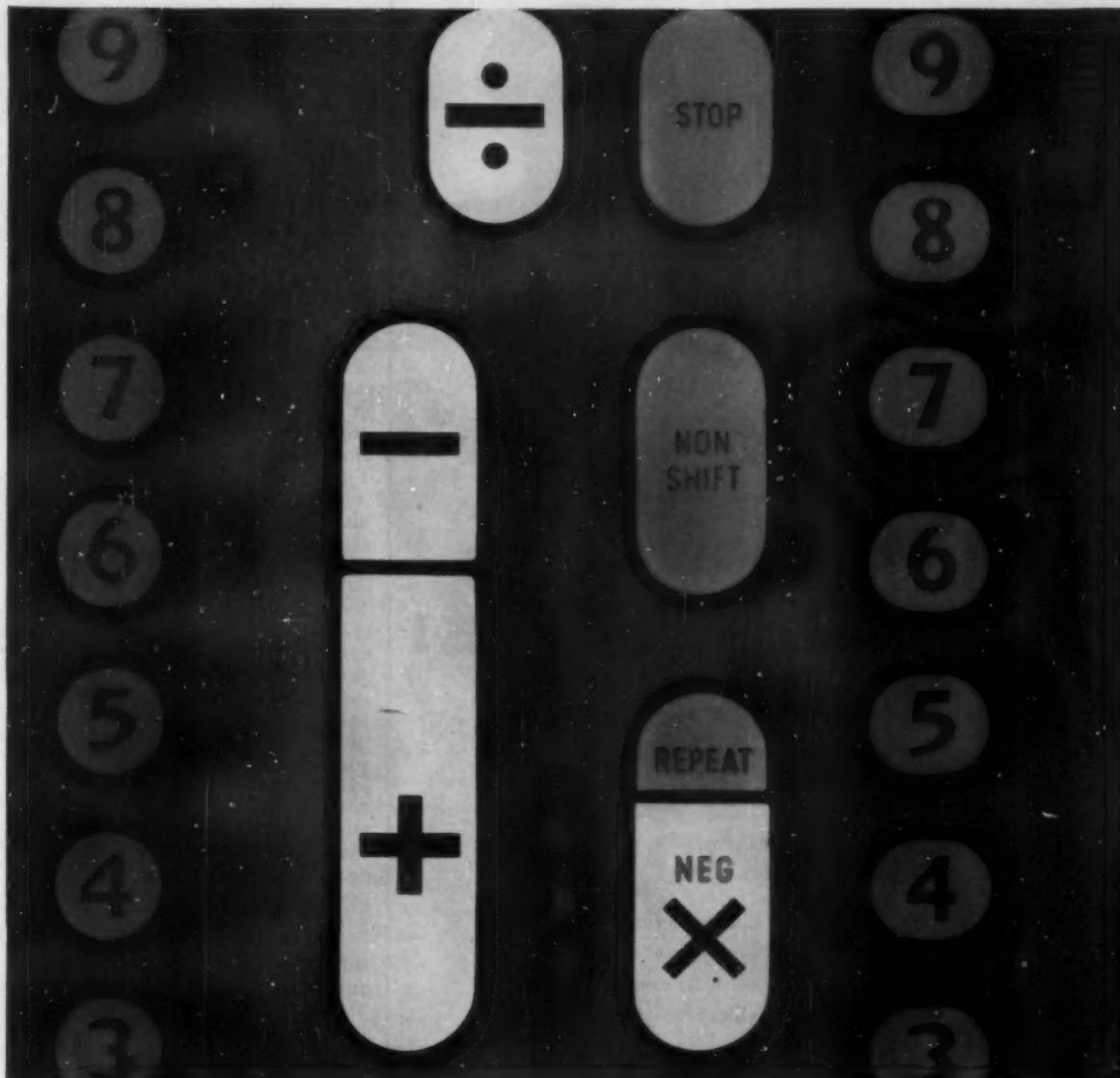
- **Security Blanket**—Other companies—both those already in the rare earth business and those planning to enter it—are looking for something much bigger.

Much of the cause of their optimism is covered by a strict AEC security blanket, but the general reasoning is clear.

The rare earths, because of their peculiar properties, may be the key to the successful harnessing of nuclear energy.

This is because within the highly radioactive core of the atomic reactor, materials are needed whose structural strength will not be affected by the force of the reaction. Such materials must also be highly resistant to corrosion, and have a very high temperature strength and stability.

But even these properties, so familiar to metallurgists, are not sufficient for the materials designed to withstand the force of atomic fission. Neutrons, the



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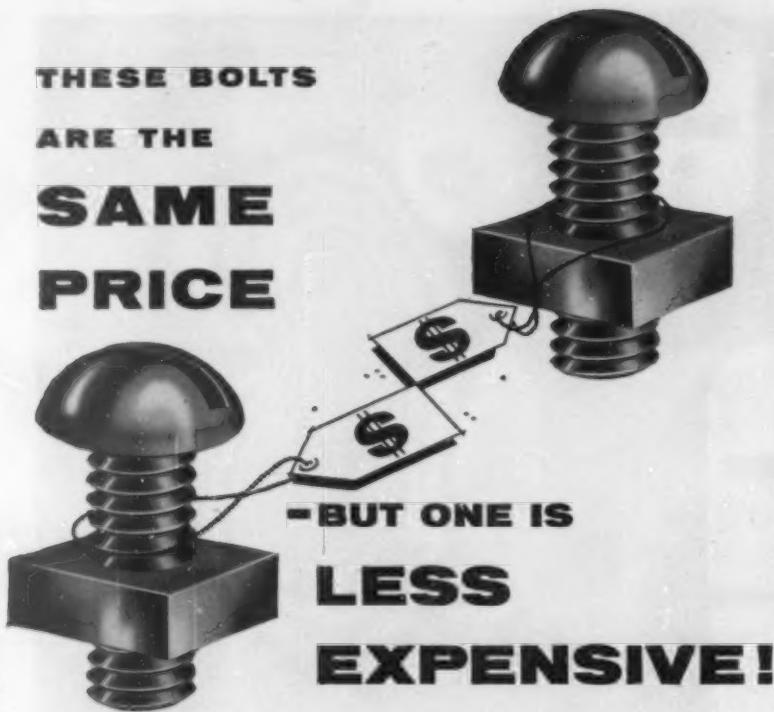
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tiny uncharged particles upon whose presence the atomic reaction depends, cannot be wasted—above all they cannot be absorbed by the structural parts of the reactor.

To answer such a demand, metallurgists and engineers are working feverishly in research laboratories throughout the country. They obviously must have new alloys, and the rare earths may be the solution.

• Other Uses—In the atomic energy program, the rare earth metals may have other potential uses, too. For example, gadolinium, samarium, and europium may eventually replace hafnium—the element now used to control the atomic reaction.

Cerium hydrate already is being used as an ingredient of optical glass used in atomic energy piles; high purity cerium is necessary in making glass for windows that allow viewing of radioactive areas.

• Nondesign—Research experiments are turning up a host of other potential uses for the refined rare earth metals, too.

The oil industry is cautious but interested in recent experiments using rare earths as catalysts in oil cracking operations. A score of chemical companies with difficult catalytic polymerization problems are showing considerable interest in the rare earths. (Polymerization reactions are involved in the manufacture of many synthetic fibers and plastics.)

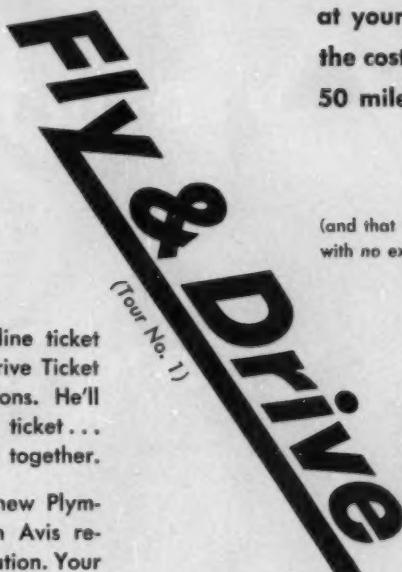
Color television manufacturers have recognized for some years the value of the rare earths in making color picture tubes. Lanthanum, cerium, europium, and samarium may all find a major market here.

The rare earths, because of their drying properties, are being researched painstakingly by paint and coating manufacturers. Right now, their relatively high price prohibits their general use in most paints. But ceramics makers are interested in the potential use of the salts of neodymium and praseodymium as colorants.

• Ideas Are Endless—The flow of new ideas for uses for the rare earth metals is almost endless. Here's just one example of the part they may play in manufacturing of the future:

Small portable X-ray machines have long been the dream of medical authorities. And before long, thanks to one of the mysterious rare earth elements—thulium—they will be available to hospitals and rescue services in units weighing less than 25 lb.

Thulium, researchers at the Army Medical Research Laboratory at Fort Knox say, wasn't isolated as a pure element until a few years ago. Then scientists, spurred more by curiosity than by anything else, found that if thulium were placed in a nuclear reactor and made radioactive, it would

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The result of this discovery was the development of a portable X-ray unit that contains, as its heart, a piece of radioactive thulium smaller in diameter than the eraser on the end of a pencil. This tiny quantity of thulium will continue to give off X-rays for as long as a year, making design of a portable X-ray machine possible.

Other acknowledged use for the various rare earth metals include abrasives for polishing lenses and mirrors, glass colorants and decolorants, leather tanning, waterproofing materials, mildew-proofing compounds, printing inks, and radio condensers.

A number of large pharmaceutical firms are looking at rare earth elements for drug preparations too. Cancer researchers and makers of mental health drugs are particularly interested in seeing how the rare earths can be used in developing new (and perhaps more effective) products.

• **In the Dark**—Though there's no security veil wrapped around this part of the rare earth research picture, few details of progress are yet being released from company laboratories. Not even the companies that are selling the rare earths and their compounds for research purposes know precisely what uses are being investigated.

It's obvious, however, that such research is becoming a beehive of activity. And that more than anything else is what's causing new companies to join the potential rare earth production parade. Now either in production or planning to go into production—beside Lindsay and Mallinckrodt Chemical Works are Marine Minerals, Inc., and Heavy Minerals Co. (both subsidiaries of Crane Co.), Research Laboratories of Colorado, Michigan Chemical Corp., W. R. Grace & Co. (through Davison Chemical and Rare Earths, Inc.), U.S. Yttrium, Maywood Chemical Works, Mitten Chemical, and Research Chemicals of California.

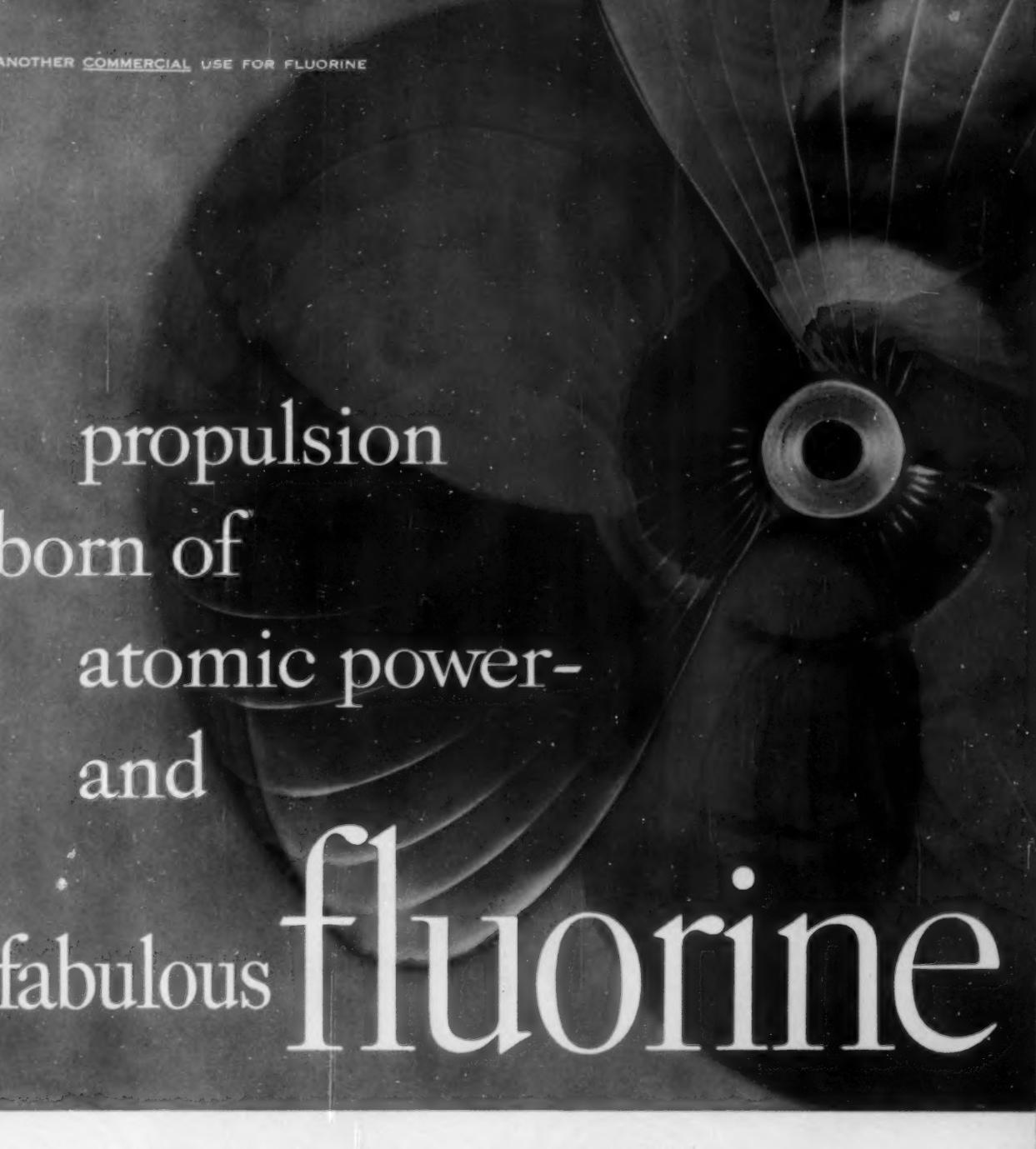
• **Research Boost**—One thing that undoubtedly is putting a lot of steam into the field is the research going on at the U. S. Bureau of Mines new experimental laboratory at Reno. Opened only last September, one-third of its first year budget is going into rare earth research.

But the possibilities suggested by the 15 little-known metals in themselves also are stimulating the research effort. Typical of this kind of thinking is the reaction of one researcher—fingering erbium oxide—a delicate pink powder for which no use has as yet been found.

When asked what it's good for, he can only shrug his shoulders. Nobody knows yet. But there's a good chance it will become a major cog in the technological advances of the future. **END**

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Metallic Fuels?

Research on organo-metallics may lead to utilization of their tremendous heat potential.

Researchers are showing increased interest in a relatively unknown class of chemical compounds—the organo-metallics. They think these compounds may someday challenge atomic energy as the fuel propellant of the future. And they expect their research also will turn up many other uses.

Just last week Borax, Ltd., of London announced it would form a new U.S. subsidiary to push development of borax and its constituent boron.

And in U.S. research laboratories, developments are almost ready to break on a whole host of new organo-metallics.

- Heart of the Matter—Basic to the development of organo-metallic compounds—is the fact that some metals can be made to burn with intense heat. Though this property has been long known, very little has been done to exploit it.

Take boron, for example. For centuries this element has been dealt with mainly as an inorganic material. It has been used generally to make such inorganic compounds as boric acid and borax.

Yet boron has metallic properties, too. By linking boron with certain organic chemicals, you get compounds with tremendous heat burning capacity. One of these, pentaborane, burns with such intense heat that it is a potential fuel for guided missiles, rockets, and even manned aircraft.

- Just the Beginning—Researchers in the organo-metallic field admit that even in the case of organic boron compounds, they've barely scratched the surface of possible uses.

Lithium is another light metal with high potential as a fuel, but it is even less completely researched. It is now common knowledge that you can combine lithium with chemicals to make such organic compounds as diborane and lithium fluoride. Not too much is known about potential uses, though.

But the lack of data is not discouraging the companies that are deep in research in the field. Standard Oil of Ohio and General Electric—to name just two—have undertaken large research projects on the organo-metallic compounds. And though it hasn't been officially linked to such research, Pacific Coast Borax, a division of Borax Consolidated, is now making experimental quantities of boron in Wilmington, Calif. **END**

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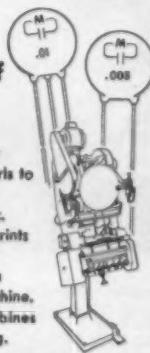
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Operating under severe weather and ice conditions, Seabees and Navy construction teams established the first two permanent self-sustaining bases in Antarctica last year. These stations will be followed by more as growing numbers of scientists troop across the ice mass that makes up the "unknown" continent. They are . . .

Looking for Answers

The exploits of the government expedition to the Antarctic—Operation Deepfreeze—made exciting reading for millions of people. Accounts of the trip made a region about which less is known than any area this side of the moon seem a little less remote. But the story is really only just beginning. In the next two years, 6,000 Americans—mostly scientists of one sort or another—will grope their way across the white continent with high hopes of bringing back answers to questions that have been plaguing them for a long time.

• Purpose—Aside from its obvious purpose—to learn more about the natural phenomena that govern the continent where the ice is almost two miles deep in some places and where the temperature drops to 120 deg. below zero—the U. S. expeditions to the Antarctic have a well-defined scientific intent.

Through experiments conducted there this year and next, scientists hope to learn more about the ionosphere (the earth's protecting atmosphere), how heat gets transported through the air, where water vapor goes, and a host of other questions that bear on virtually every subject—from radio communications and long-range weather forecast-

ing to controlled missile navigation and ore exploration.

• Early Start—Actually, Operation Deepfreeze dates back to November, 1954, when the U. S. S. Atka, an ice-breaker, fought its way halfway around Antarctica in a search for possible base sites. Last year's expedition set up the first permanent bases and the quest for scientific data began.

• Preliminary—Scientists aboard the Atka and a small flotilla of Navy ships sent to the Antarctic last summer made preliminary weather, ice, and cosmic ray measurements. Already, for example, it has been determined that the ice barrier supporting Little America is between 600 and 800 ft. thick, that there is land underneath the ice and snow on which Williams Air Operating Facility is built at McMurdo Sound. And cosmic ray investigations have shown that cartographers misplaced the Equator by a full 6 deg. This knowledge alone will be worth countless millions of dollars to scientists engaged in work on long distance radio communications and aircraft navigation.

• Only the Beginning—But operations so far concluded are still basically a support mission for large-scale science



at the Bottom of the World

studies due to take place during the International Geophysical Year starting July 1, 1957.

There are solid reasons for selecting this 18-month period as the time for conducting the bulk of U.S. scientific study. During the International Geophysical year—which occurs every eleven years—there is greater-than-normal sunspot activity in the earth's atmosphere. And much information can be gathered about the effect of sunspots (caused by giant storms on the sun) on electricity, earth magnetism, and a host of related phenomena that can't be gathered successfully at any other time. The Antarctic, moreover, is the ideal place to go to collect such information. Not only does it have a full six months of darkness (making several types of tests on communications possible), but it also has the coldest temperatures and the lowest air pressure in the world. Just why the air pressure in the Antarctic is so low—about an inch of mercury lower on an aerometer than anywhere else—and why it's so much colder there than in the Arctic are two of the puzzles scientists have been trying to piece together for a long time.

In general, research due to be con-

ducted in Antarctic next year falls into several general classifications.

- **Study of Ionosphere**—One big job will be a methodical check into the ionosphere—the bank of rarefied, electrically charged atmosphere 50-250 miles above the earth's surface upon which worldwide radio communications depend. The ionosphere reflects radio waves somewhat the same way a mirror reflects an image, permitting radio waves to circle the globe by a hop-skip-and-jump transmission pattern.

Several different types of tests will be made—to determine such things as what effect darkness has on communications, what kind of correlation is possible between sunspot activity and radio black-outs, and what causes whistlers. Whistlers are a special kind of natural radio signal in the audiofrequency range that can play havoc with manmade radio waves. It is believed that they are caused mostly by energy from lightning discharges that has traveled from one hemisphere to another along lines of the earth's magnetic field.

Actually, we know little about whistlers at present. But a major breakthrough in this scientific field alone could bring new methods of detecting

the presence of ionization beyond the now-known reaches of the ionosphere. And it could open the door to knowledge about magnetic storms.

- **Auroral Lights**—A closely related project will be an investigation into the causes of the mysterious light that fills the air above both poles—the auroral lights. It is now believed that such light comes from the bombardment of air by charged particles—presumably from the sun.

Antarctic studies will give aerologists a chance to determine where the auroral zone begins, and why the Antarctic atmosphere seems to cause the strange light.

- **Magnetism**—Tied in with the other studies will be an important investigation into the problem of what causes variations in the earth's magnetism.

Both air and sea navigation experts have been crying for an answer to this question for many years because of its great bearing on air and water travel. Although the earth's basic magnetism is centered in its hot, deep core, electric currents floating around in the ionosphere apparently have an effect on compass variations.

The scientists also will try to find

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out something about another electric current suspected to exist about 20,000 miles up—about which virtually nothing is known, but which apparently causes geomagnetic storms that coincide with radio blackouts.

In addition, the first detachment of scientists going down to the Antarctic in 1957 probably will spend a good bit of time chasing after the origin of cosmic rays. These particles fly at nearly the speed of light. An attempt will be made to count them to observe the effect of weather and darkness on their speed and frequency. This kind of data will be vital to successful space travel in the future.

Seismographic observations the Antarctic mission will make will range from studies into how manmade and natural earthquakes tend to shift the South Pole's giant ice pack affecting sea level and weather in the surrounding oceans, to an investigation of what metallurgical treasures may lie beneath the ice.

A number of overland transcontinental expeditions are planned to chart the precise areas of land underneath the ice and snow. And ships steaming to and from Antarctica will continue to survey thousands of miles of ocean bottom. Their biological and oceanographic studies should be a big help to future mariners.

• **Exploring Flights**—The advance detachment of Navy and Seabee polar experts who journeyed to the Antarctic this past winter took a stab at mapping the terrain for those to follow. Building bases was the paramount job of Operation Deepfreeze I. But while the ships were unloading, and the Seabees were building permanent bases at Hut Point (in McMurdo Sound) and at Little America (on Kaiman Bay), U. S. flyers managed to explore about one-third of the great unknown regions of Antarctica's kidney-shaped interior. They discovered previously uncharted mountain chains and plateau areas. Existence of the mountain chains supports the theory that Antarctica is one solid continent instead of two islands connected by an ice mass.

• **Political Overtones**—Before the final chapter is written in Operation Deepfreeze, there are sure to be a number of other fields for study O.K.'d by International Geophysical Year officials.

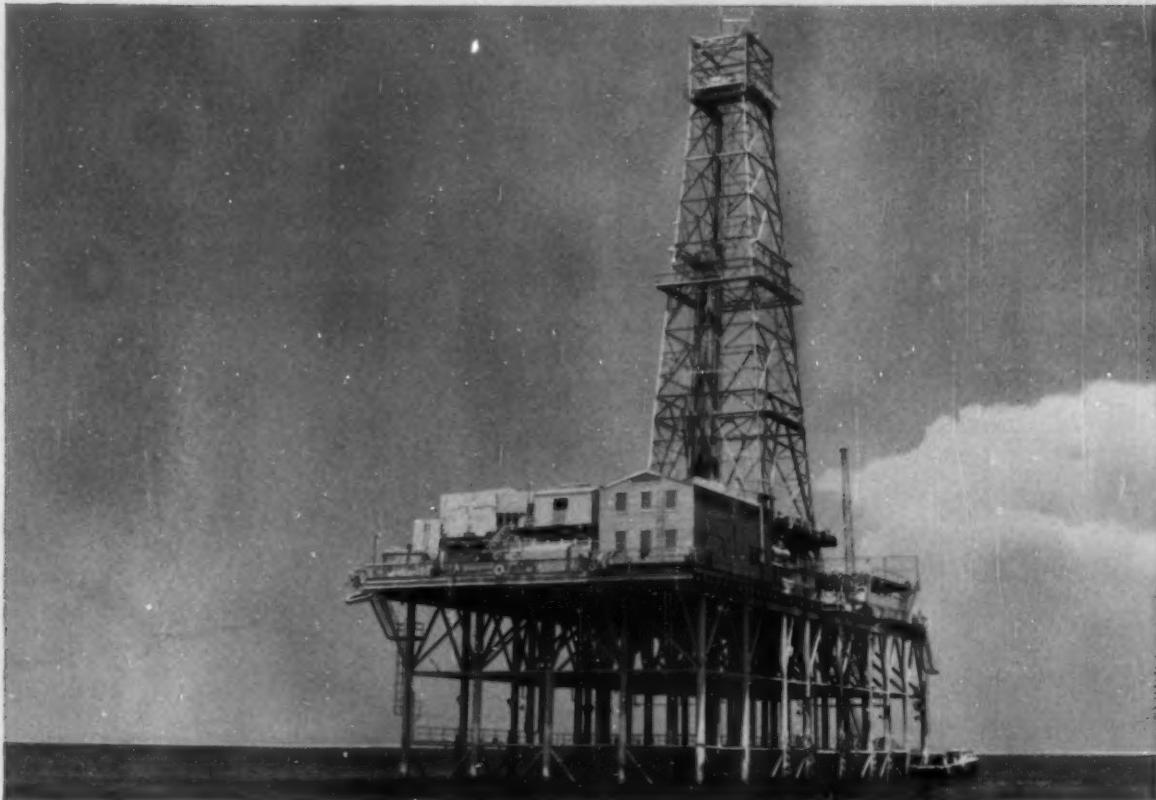
Though the purpose of the over-all operation is primarily scientific, there are definite political and strategic considerations involved in this first major attack on the 6-million sq. mi. white continent situated at the bottom of the earth.

It's no secret that any nation that controls Antarctica also controls most of the important air and sea lanes of the Southern Hemisphere. This includes South Africa, South America, and Australia. **END**

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UNDERWRITERS' LABORATORIES, INC. uses a hygro-thermograph (a relative humidity and temperature recorder), a recording rain and snow gage, a micro-barograph (recording barometer) and Aerovane* (wind speed and direction recorder). These instruments are used in research and scientific testing of fire fighting and prevention equipment, outdoor exposure tests of burglar alarm systems and other materials and devices tested in the interest of public safety.

IBM CORPORATION has many areas

where strict humidity control is necessary. For example, where they house their electronic data processing machines, they use several hygro-thermographs to provide accurate and permanent records of temperature and humidity vital to optimum operation.

PROCTER & GAMBLE uses a hygro-thermograph in their testing center to record simulated atmospheric conditions found in various parts of the world, where their products are stored and marketed, so the products will survive any climatic variation and reach the customer in the best possible condition.

WESTERN ELECTRIC COMPANY uses practically every type of Bendix weather instrument on the DEW line, the radar distant early warning system project which extends from Alaska to Greenland.

L. S. AYRES department store provides weather information for their shop-

pers via a Bendix Weatherman*, which gives them temperature, humidity, barometric pressure, rainfall, wind speed and direction.

Friez Instrument Division of Bendix has many other case histories of profitable use of weather data instruments. Friez experience goes back eighty years. It is the world's oldest and largest manufacturer of instruments for weather bureaus as well as scientific and industrial users. If you have a weather problem write Friez Instrument Division direct at Baltimore 4, Maryland.

We suggest you also write for "Bendix and Your Business" to know more about all our operations and how they might contribute profitably to yours. Please address inquiries to:

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In Research

• • •

Drug's Explosion Lights Up Cells, Offers Aid in Cancer Studies

University of Chicago scientists, directed by Dr. Peter P. H. De Bruyn, are looking into the cancer treatment possibilities of a class of drugs known as the amino acridines. What draws their interest is a unique property that enables the amino acridines to incorporate radioactive tritium (triple weight hydrogen) and explode it silently and with pygmy force inside living cells.

This explosion strikes only the hearts (or nuclei) of cells, lacks the range to disturb the cytoplasm in which the cell nucleus floats. Thus when the amino acridines are used as a stain, they cause the hearts of dividing cells to light up brilliantly. As such they should offer a useful new tool to cancer research.

• • •

Mesabi's Non-Magnetic Taconite

Studied in Quest for Ore Concentrates

The Great Northern Ry. is joining the Universities of Minnesota and North Dakota in an attempt to find a better process for concentrating the non-magnetic taconite ore, found in quantity on the Mesabi Range. Successful development of such a process would be of great importance in extending the commercial life of the Mesabi Range—which is now running low on high-grade iron ores.

The University of North Dakota draws cards in the project primarily because of the possibility that lignite (available in quantity in North Dakota) may play a part in any new taconite roasting process.

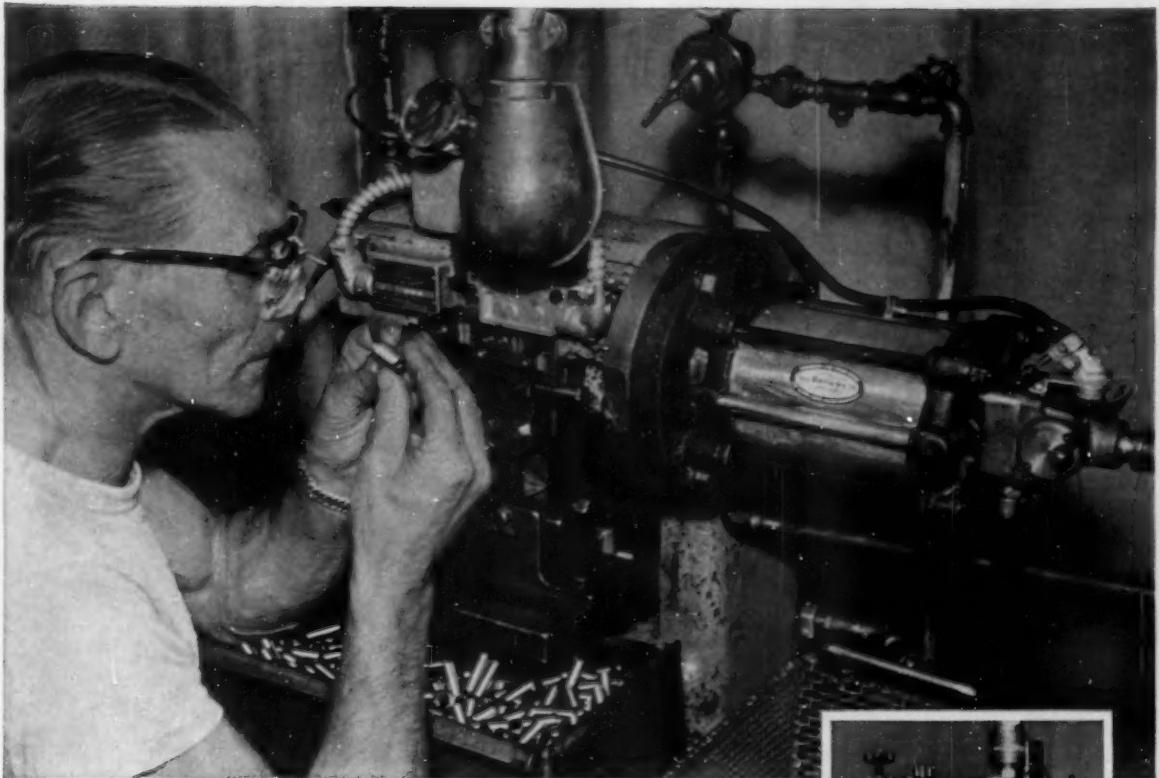
• • •

Spotlighted Mysteries of Commonplace Tin As Byproduct of Atomic Research

Through a grant from the Atomic Energy Commission, the chemistry of tin is under study at the University of Michigan. Although tin is a commonplace metal that turns up in the American home in everything from toothpaste to tin cans, scientists know little about how its atom is converted from one form (stannous) to another form (stannic). Sometimes exposure to air is enough to make this change take place. Equally mysterious is the way stannous fluoride toothpastes tend to discolor baby teeth of children under six, yet prevent tooth decay in adults.

Most pressing reason for research, however, is tin's intimate connection with atomic fission. Some 34 elements, including tin, are produced in atomic piles. All must be removed so that they won't dilute or clog the uranium, and so stop the atomic reaction.

Atomic scientists have another big interest in furthering knowledge of tin chemistry. Atomic pile tin is purer and easier to work with than natural tin, which is often combined with other elements. It should therefore prove much more acceptable for use in the laboratory.



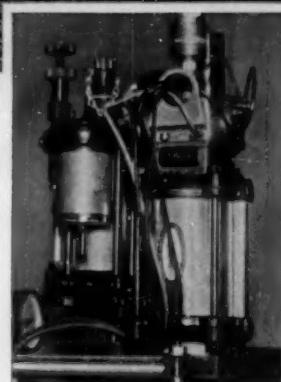
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PRODUCTION

Steelmen's Problem:



QUENCH-and-temper process, above, gives pipe high strength and ductility for service in deep wells.



INSPECTION, right, must be extremely critical. A flaw can ruin a multi-million-dollar investment.

Making Pipe Perfect

As oilmen drill deeper, and explore underwater fields, they pose serious new problems for steelmakers. There's too much investment at the wellhead to chance a single pipe failure.

THE DEEPEST WELL ever to produce oil was brought in last month at Port Sulphur, La., 45 mi. south of New Orleans. The string of drill pipe reached a record depth of 22,570 ft. (drawing, right), and oil was drawn from a sand formation at 21,443 ft. Now the well is producing 207 bbl. per day.

To reach these depths cost Richardson & Bass, John W. Mecom, Freeport Sulphur Co., and other investors about \$2.5-million.

Meanwhile, off the Gulf Coast and off California, in water deep enough to float the Queen Mary at low tide, drillers are poking into the sea bottom from drilling platforms and barges (BW—Aug. 20 '55, p76). One of these man-made islands with several directional wells can represent a \$4-million investment.

In each case, the oilmen are gambling heavily on the perfection of three types of steel pipe they use: the drill pipe, the casing that lines the well, and the tubing that brings the oil to the surface.

• **More of a Challenge**—On land, more and more drilling rigs that cost from \$1,500 to \$2,000 a day to operate are probing below 12,000 ft. In the coastal waters, more and more rigs are getting into operation at costs of \$3,000 to \$4,000 a day.

These rigs that face special operating hazards remain small in proportion to the total number, but they present steelmen with what is at once a stern challenge and a profitable opportunity.

As exploration gets deeper—for example below 12,000 ft.—it becomes increasingly expensive, and the odds against a strike that will pay back such investment get correspondingly higher. As a breakdown in the steel—particularly drill pipe and casing—becomes more likely, it also becomes more costly:

- At the greater depths, temperatures rise to the 300F-350F range, and pressures to 7,500 to 12,000 lb. per sq. in. (psi.). These factors put the materials under severe stress.

- The deeper you go, the greater the investment you have at the wellhead. This investment is constantly exposed to hazards. Offshore, the investment and the hazards are multiplied.

- In the Shop—Consequently, the shops that make seamless pipe and tubing—the products the steel industry calls oil country goods—are being asked

to work to ever higher standards, as at Jones & Laughlin mills, (pictures, left).

Last year, about 2.5-million tons of steel went into oil country goods: about 80% of it for casing, 15% for tubing, and 5% for drill pipe, the only one of the three that's generally pulled out and re-used immediately. By no means all of this tonnage, however, had to be fabricated to high-strength specifications.

Of the casing, for example, no more than about 30% could be described as high-strength—which means having a minimum yield strength (the point at which an external force produces permanent deformation of the material) of at least 80,000 lb. per sq. in. And far less than one-third of this select grade ran as high as 110,000 psi.

- **Those Producers**—The oil industry can buy N-80 casing (minimum of 80,000 psi. yield strength) from many sources, but P-110 casing (110,000 psi.) is made right now by only three producers: National Tube Div. of U. S. Steel Corp., Spang-Chalfant Div. of National Supply Co., and Jones & Laughlin Steel Corp. J&L, newest of the three to this field, is stepping up production of high strength pipe is part of its drive toward developing new markets (pictures, left). Their production probably ranks in that order. But at least one other producer is reported ready to enter the field, another is experimenting, and at least two others have the wherewithal to get into it.

Oilmen will be happier when they have more sources for the highest-grade pipe. Even now they regard P-110 casing and P-105 tubing as perhaps the most critical steel products they buy, and demands in the near future will be even more stringent.

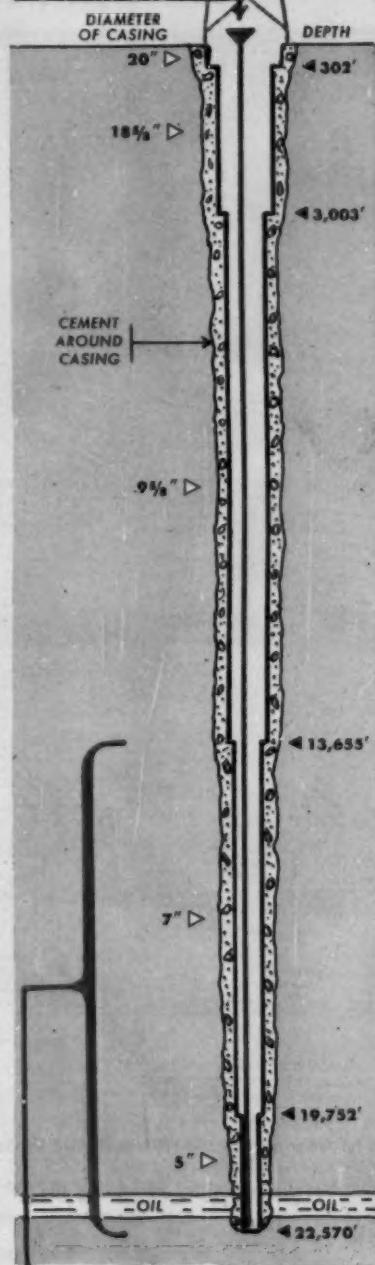
- **Three Stresses**—The three main types of pipe, classed by use—drill, casing, tubing—must stand up to three kinds of stress while in service. These are the forces toward burst, toward collapse, and toward stretching and breaking (tension). The pipe is subject to punishing corrosion and abrasion, too.

As a well is drilled and put into production, this is what happens:

Drill pipe turns a bit attached to its lower end; the pipe is turned by a power-driven table on the floor of the rig. As the drilling goes deeper, the drill pipe is under two forms of ten-

World's Deepest Oil Well Shows Where High-Strength Pipe Goes

DRILL PIPE must support weight of a 4-mile-long string of pipe and withstand the torque needed to turn bit at bottom. When well is completed, it is lined with TUBING.

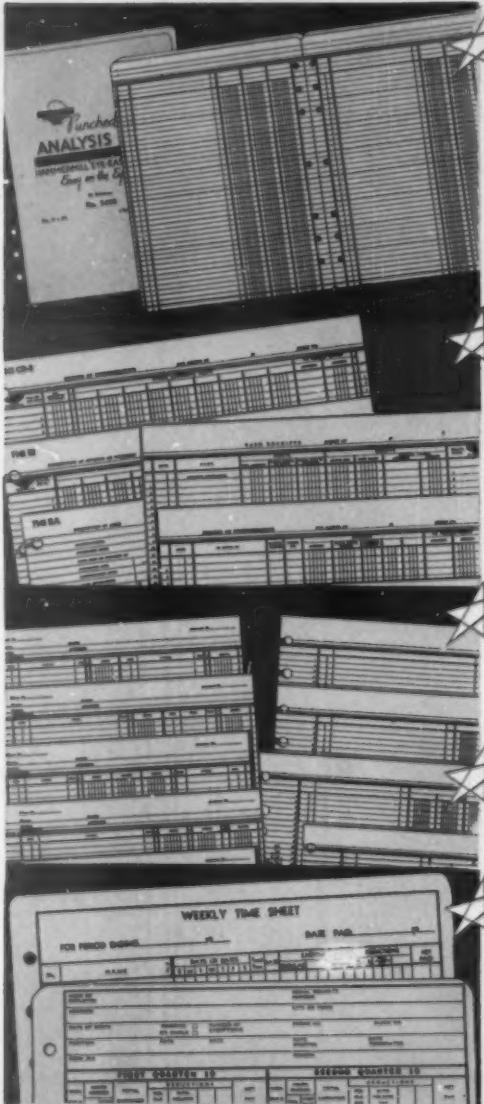


CASING is cemented in. At bottom, it must withstand earth pressure — up to 12,000 psi. — and heat up to 350F.

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"... oil industry's needs are far ahead of steel's ability to mass-produce . . ."

PIPE starts on p. 114

sion: the great weight of perhaps three miles of pipe hanging down from the drilling platform, and the twisting action as the rotation of the power turntable is transmitted to the bit. Resistance to burst or collapse is less vital in drill pipe than resistance to tension.

Casing is inserted as the hole deepens, to keep the walls from caving in. It, too, is under tension when a string of perhaps 14,000 ft. is hanging from the platform (the final string of 5-in. casing in the 4-mile deep Richardson & Bass well weighs 264-tons), though this stress is eased when the string is concreted into place.

Casing is chiefly subjected to bursting and collapsing pressures—from gases and liquids in the formations that are being drilled, and for the pumping of the concrete down inside the pipe and up outside it from the bottom to fix it in place. Drillers figure, too, that for every foot of depth, the force tending to collapse the casing tends to increase half a lb. per sq. in.

Tubing replaces drill pipe inside the casing after the well has struck a commercial quantity of oil or gas. The casing protects it from most collapse forces, but it must be strong enough to support its own great weight and tough enough to resist the pressure of oil and gases inside. It must be durable—repairs aren't so easy to make as on your basement plumbing.

- **Fast Upgrading**—The oil industry's most critical pipe requirements are far ahead of the steel industry's present ability to mass-produce. Even before P-110 casing is thoroughly established in the steel shops, pioneers in deep drilling are calling for minimum yield strengths of 140,000 to 150,000 psi.

But the pace is quickening. As one steel company vice-president in charge of pipe sales puts it: "The lowest-strength standard grade we make today was the highest-strength grade we made 25 years ago."

It took 17 years to advance from the commercial appearance of the casing that has become the N-80 grade to the first shipments of what has become P-110. But only two or three years after that, drillers were calling for 150,000-psi. pipe, and in 1954 National Tube started making it. And other producers who haven't even gotten into commercial output of P-110 are looking ahead to the market for that very high-strength pipe for the very deepest wells of tomorrow.

- **How It's Made**—Just before World



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"...a tiny imperfection can develop into financial or human disaster . . ."

PIPE starts on p. 114

War II, drillers were beginning to demand something better than the grade that's now known as N-80. One way to get higher strengths is to use high alloy steels. But the war brought on severe shortages of alloying materials, and steelmen had to find some other way to produce the high strength. They turned to "quench and temper" heat treatment.

Because it can raise ordinary grades of steel from around 50,000 to at least 110,000-psi. minimum yield strength, and do it more cheaply than alloying can, this method is used wherever possible instead of alloying. However, it calls for expensive investment, and the steelman must know exactly what he's doing.

When the pipe is just about finished, it is heated to 1,600°F or 1,700°F, then water-quenched almost instantly (picture, page 114). This leaves it hard and brittle. So it is reheated to 800°F-1,200°F, the precise point depending on the metal's analysis and the properties that are desired. This tempering costs some strength but restores some ductility.

The series of heat treatments changes the structure of the metal. Using heat alone, the process does metallurgically approximately the same thing that adding expensive alloying elements such as nickel, chromium, and manganese would do.

To get even higher-strength pipe, the next step will be to combine higher alloy steels and advanced methods of heat treatment.

• **Problems Multiplied**—It's quite a trick to produce high-strength pipe in volume, without a single flaw and at costs that are within reason.

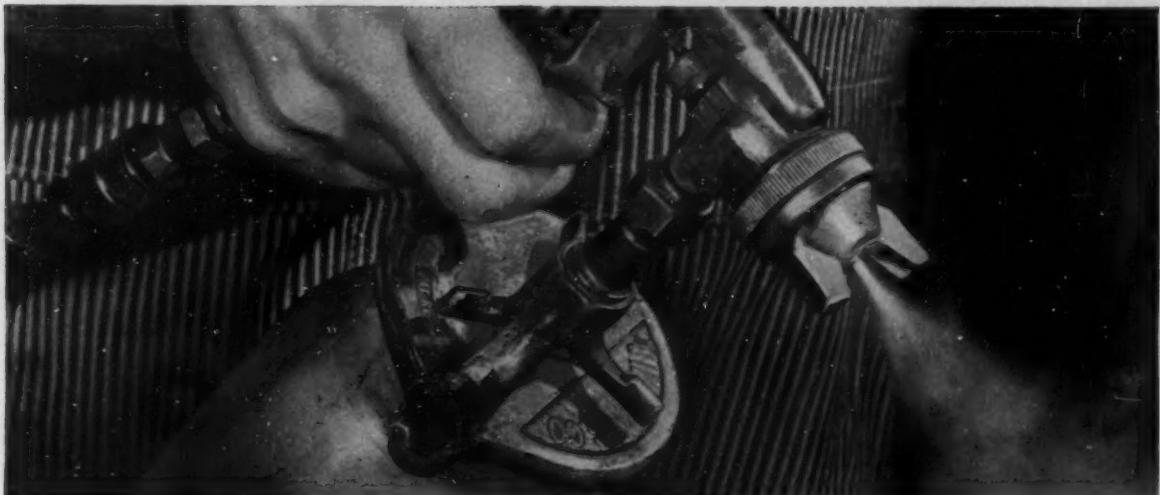
Because of the longer more critical heat treatment, it takes about twice as long to produce a length of P-110 casting as one of N-80, even though both are made of similar steel and are often finished by the same process. For the P-110, moreover, inspection costs are much higher, and rejections keep the yield from a ton of pierced rounds much lower than for N-80.

In enforcing rigorous inspection, steelmen are mindful that a tiny imperfection can develop into financial or human disaster. An oilman can lose untold hours of progress toward oil sands while his crew fishes for a broken drill pipe, at \$62 to \$166 per hour.

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"...drillers engineer their pipe strings carefully to get maximum safety at minimum cost . . ."

PIPE starts on p. 114

magnetic-particle inspection on a hot-rolled tonnage product, yet that's what every producer of P-110 casing and P-105 tubing is doing or is soon to do. One expert says that if even higher grades become standard, producers may well have to grind and inspect the pipe inside and out. That would add considerably to costs that are high already.

Given sound steel, what the pipe-makers must guard against most stringently is surface imperfections that have a V-bottom.

These imperfections—nicks, seams, roll marks, etc.—are called "stress-raisers." They are more dangerous in quenched-and-tempered pipe than in high-alloy grades; the pipe gets "notch-sensitive" when it's heat-treated to high strength. This means that a tiny nick or crack concentrates stresses that pyramid as the notch widens, until the pipe breaks.

Furthermore, no matter how carefully the pipe is inspected at the mill, rough handling on the way to the oil country can put stress-raisers on it. Pipe can be damaged in loading or unloading, in being worked up and down in the hole while being set, in being bent imprecisely for a directional (slanted) well, in careless drilling-out of concrete plugs.

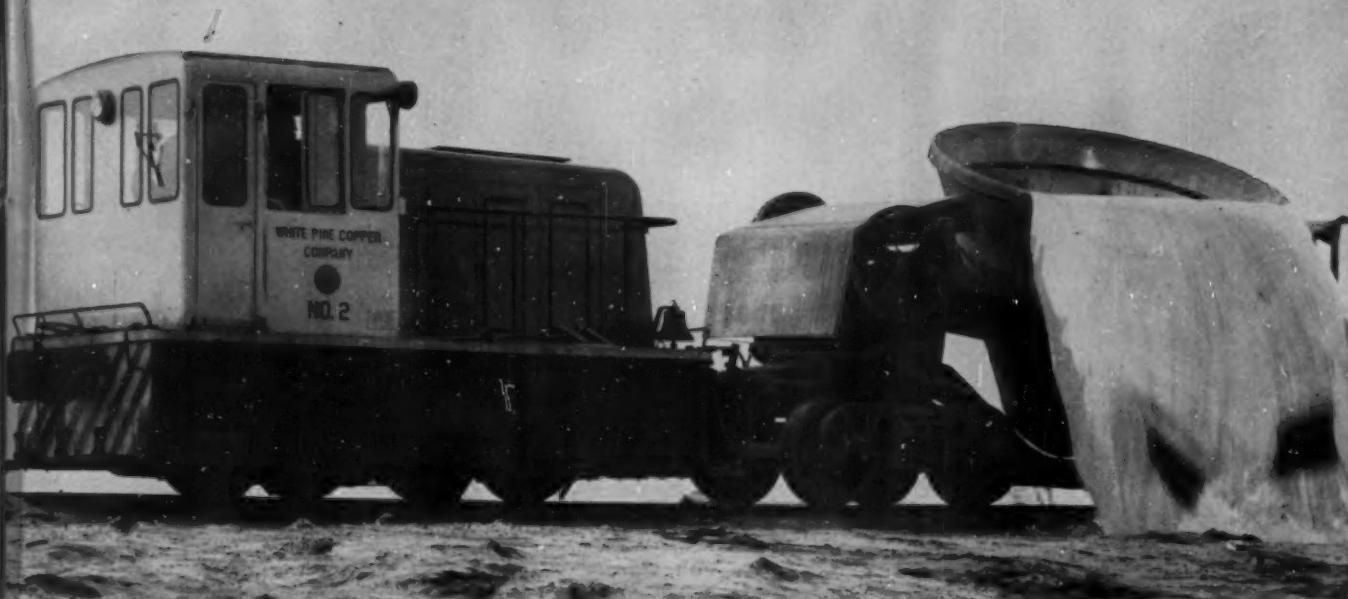
• **Engineering for Economy**—Both the high-strength pipe and the high-strength joints are expensive. (A joint must be put every 40 ft. along the casing and tubing strings, and there's no sense in putting the finest pipe underground unless it has a joint that's leak-proof and just as strong.)

Drillers engineer their pipe strings carefully to get maximum safety at minimum cost.

For example:

A casing string for a 17,000-ft. well in the Gulf area, where gas pressures tend to run higher than in many other regions, might well have P-110 casing at the top. Its strength would be worth paying for while it supported so many tons of casing below it. Farther down, it might have several thousand feet of J-55, not a high-strength grade, because the weight would be so much less and burst and collapse pressures wouldn't yet be severe. That might be followed by N-80, to meet the buildup in pressure, with P-110 casing again at the bottom where conditions prove to be most severe. END

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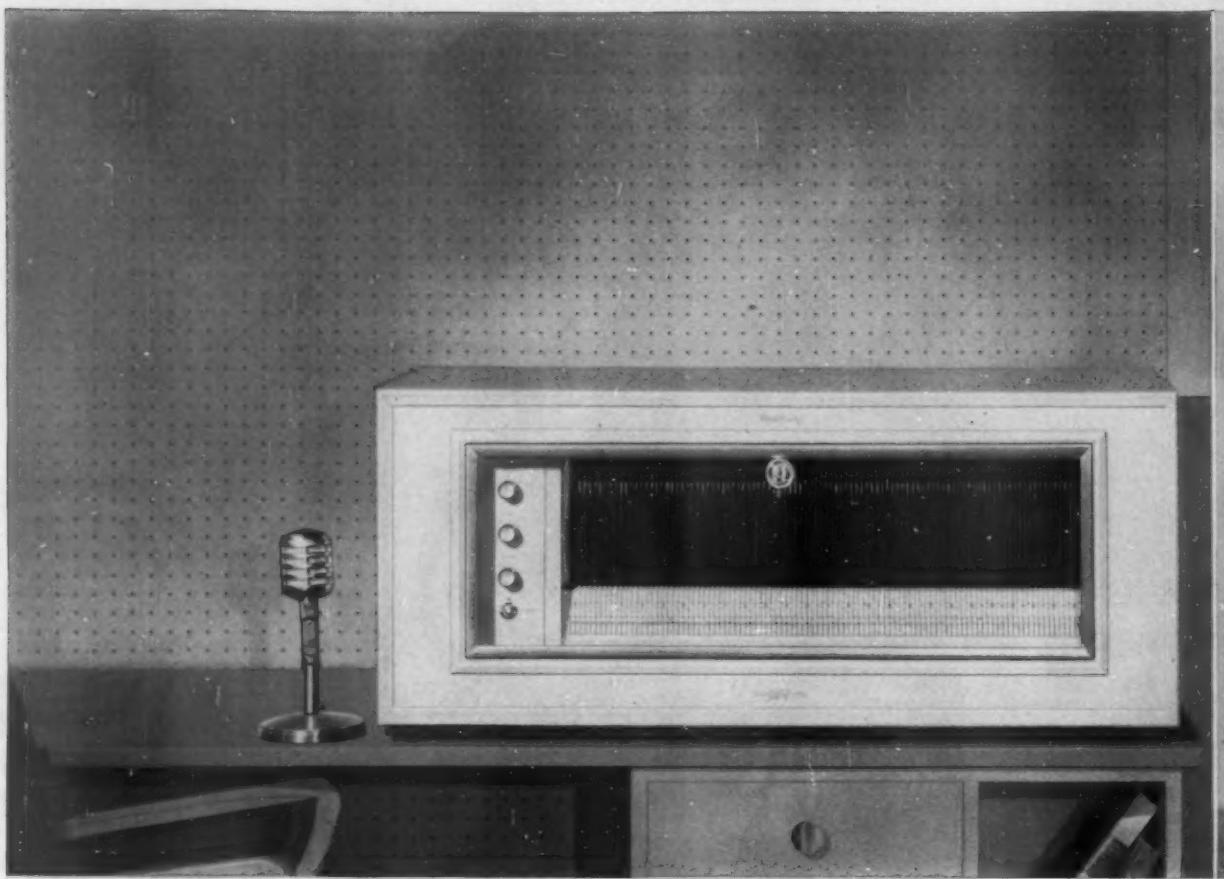
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PRODUCTION BRIEFS

Firestone Tire & Rubber Co. announced another addition to its 1,000-acre petrochemicals center near Orange, Tex. For completion in 1957, it will build a styrene plant of 75,000 tons annual capacity, to feed production of synthetic rubber. The plant will be adjacent to the company's plant for butadiene, another principal raw material for synthetic rubber.

Standard Oil Co. (Ohio) is more than doubling its refinery capacity at Toledo. The present refinery is rated at 25,000 bbl. of crude oil daily. Work starts early next year on a \$35-million integrated refinery that will handle 60,000 bbl. a day. The plant will take two years to build. It is designed to process either sweet or sour type crude oils.

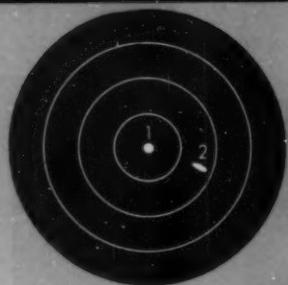
A new felt mill at Savannah will produce the base material for asphalt roofing for **Rubberoid Co.** The felt, a special pulp product, can absorb twice its weight of asphalt, the waterproofing ingredient. **Rubberoid's** plant will cost about \$3.2-million.

Helicopter production in Canada will be boosted by a \$5-million addition at Canadian Pratt & Whitney Aircraft Co., Ltd., a subsidiary of United Aircraft Corp., which builds Sikorsky helicopters in the U.S. The new facility will employ 800 workers.

Whirlpool-Seeger Corp. announced a \$19-million expansion program at its Evansville (Ind.) division. More than \$8-million will go into retooling of the refrigerator and freezer lines for 1957 models; the rest will be used for construction, rearrangement of production facilities, and additional machinery for the division's two plants. Additions are scheduled to be in operation by next fall.

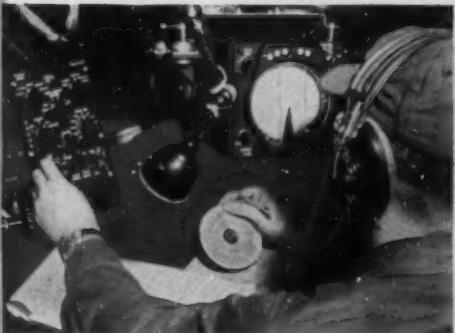
The first major order for a "bypass" type jet engine has been received by Rolls-Royce. The bypass engine differs from conventional jet engines by diverting some of the inhaled air around the combustion chamber instead of through it. This makes the engine less noisy and more economical. Trans-Canada Air Lines ordered \$28-million worth of engines and parts to power its fleet of Douglas DC-8s. Deliveries are for 1960.

General Tire & Rubber Co. announced it is expanding its Ashtabula (Ohio) chemical plant. Production capacity for vinyl resins will be boosted by 50% above the current rate of 25-million lb. a year. The expansion will permit the manufacture of other types of vinyl resins besides polyvinyl chloride.



THE PRINCIPLE OF ALL RADAR is illustrated at right. Radio waves, indicated by arrows, bombard any objects in their path and bounce back, presenting the object on the scope above the image of a ship in distress (2) and in total darkness.

THE STORY BEHIND THE STORY



FLYING IS SAFER, and navigation is simplified for Air Force planes equipped with Sperry APN-59 Radar. For example, thunderheads and other weather disturbances are revealed in advance, so course may be altered to avoid storms.

RADAR: DETERRENT TO WAR, PROTECTOR OF LIVES

Its uses Expand as its Ability to Detect the Unseen Increases

In a few short years, radar has passed from the experimental stage into a highly dependable servant of humanity. It helps to keep the peace—because its use in early warning networks reduces the possibility of successful enemy attack, while its use in new bombing and missile systems increases the probability of deadly retaliation. By pushing darkness and storms aside, it increases safety in transportation, protects property and saves lives.

To provide a thoroughly stable source of power for radar, Sperry developed the Klystron Tube. From this, Sperry has gone on to pioneer in every phase of radar development, working with every branch of the military, and with industry as well.



GUNFIRE CONTROL SYSTEMS owe much of their precision to radar. For example, an important one, this Mortar Locator developed by Sperry for the Army, uses radar to track an enemy shell, then plots its point of origin to locate an enemy battery.



MISSILES FOLLOW COURSES

established by radar whether launched from air, land or shipboard, as in the case of these Navy Terriers, radar-guided by Sperry.

SPERRY GYROSCOPE COMPANY
Great Neck, New York
DIVISION OF SPERRY RAND CORPORATION

Jennite J-16

PROTECTS
ASPHALT



adds new bloom to old Garden



Driveway in Boston Public Garden sealed
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Jenniting doubles the service life of every asphalt pavement—whether it be airfield, playground, tennis court, parking lot, home driveway or public parkway.

Jennite liquid surface seal stops destructive effects of gasoline and oil, seals out frost . . . stops crumbling, retards drying action of sun. The attractive, satin black Jennite surface is tough, easy-to-clean . . . a sound maintenance investment. Write for Bulletin L352-56.



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Shell-Ice being blown into the holds
of a Gulf-coast fishing vessel.

Below: Bagging Shell-Ice for sale at Okla-
homa City. Plant makes 40 tons daily.



Shell-Ice

Answers the needs of fishermen, truckers, dairymen, poultrymen, hotels, hospitals, restaurants and others for clean, broken ice that can be scooped, shoveled, bagged, or blown through a hose. • Shell-Ice Makers are full-automatic, require little floor space, are highly economical. Built in a multiplicity of sizes. Many in use. Get Bulletin 54 now, and find out what Shell-Ice can do for YOU. Write today to

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FRICK Co.
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NEW PRODUCTS



Electric Blankets . . .



For Industry's Jobs

Versatility and ease of operation have helped gain electric heaters an important place in almost every industrial heating job. Recently, U.S. Rubber Co. introduced a new wrinkle with its Us-kon electric blankets. The blankets are made of laminated rubber-conductive inside and non-conductive outside—and can be heated up to 220 F.

While their greatest use probably will be in molding and heat curing operations, they can be adapted for such varied work as melting ice, warming food, and incubating eggs.

The blankets are thin—about $\frac{1}{8}$ in.—and flexible enough to fit into tight corners and around complicated shapes. What's more, they can be subjected to pressures up to 200 psi.

• Blanket's Role—Because the blankets can be switched from job to job and are available in many sizes and shapes, the manufacturer expects large companies to stock them in quantity. Then, when-

To the man with a Plant Site on his mind



If you know there's a new plant in the future of your company, the time between now and ground-breaking may be many times more valuable than you suspect. The time to begin looking for a plant site is the day you decide to build.

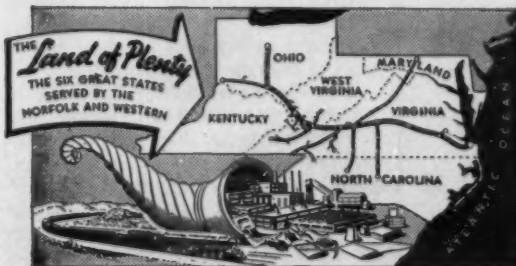
Since the N&W's plant location service costs you nothing, why not "wrap up" this important decision as promptly as possible? Let us give you data *now* that you'll need eventually anyway. It will save you many

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Our team of plant location specialists have been serving men of industry for more than 50 years, and they'll be glad to provide you with dependable advice and information on sites most suited to your specific requirements. Let them tell in detail about the Land of Plenty and its numerous advantages for industry of all types and sizes. Call them. There's no obligation, and your inquiry will be handled in confidence.

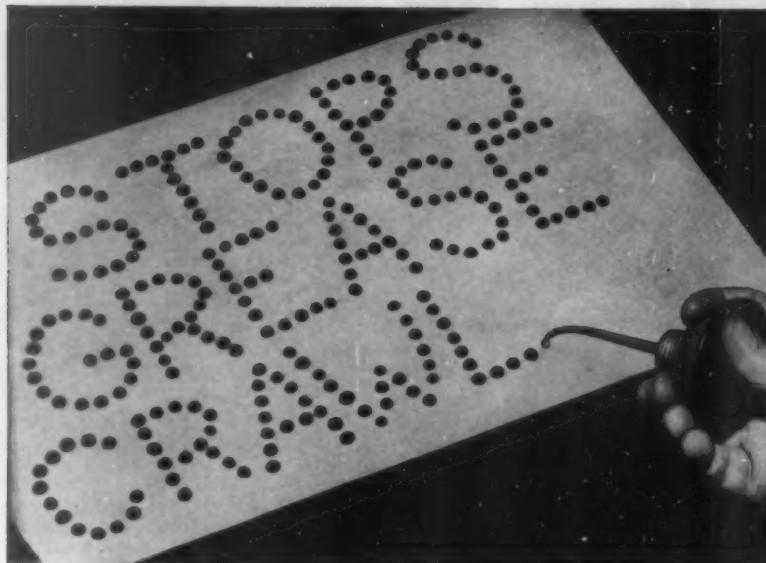
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Norfolk and Western
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Patapar gives you WET-STRENGTH, too

The new grease-proof Patapars have the same high wet-strength that is inherent in all the many different types of Patapar Vegetable Parchment. *This wet strength is sure and permanent.*

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Patapar
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HI-WET-STRENGTH • GREASE-RESISTING

HEADQUARTERS FOR VEGETABLE PARCHMENT SINCE 1885



ever a heating job comes up, a blanket can be adapted easily. However, in many industries the units will take over in permanent heating installations. Some of the more important uses are:

Furniture: For attaching veneer and other glue-curing jobs, the blankets can be nailed to the press frame (pictures, page 126) or fitted around irregular shapes. This eliminates the need for wiring special heating coils into the frames.

Plastics: The blankets can often cut down the time needed to laminate plastics to each other or to other materials. In many of these jobs, it can be sucked down into the part to be vacuum molded to provide the heat to soften the plastic sheet.

Refrigeration: The blankets can be cemented to the drain pans of refrigeration units to provide heat during the defrosting cycle.

Drying: In many processes, such as drying wallpaper, long strips of Us-kon can be used instead of hot air or other heat sources.

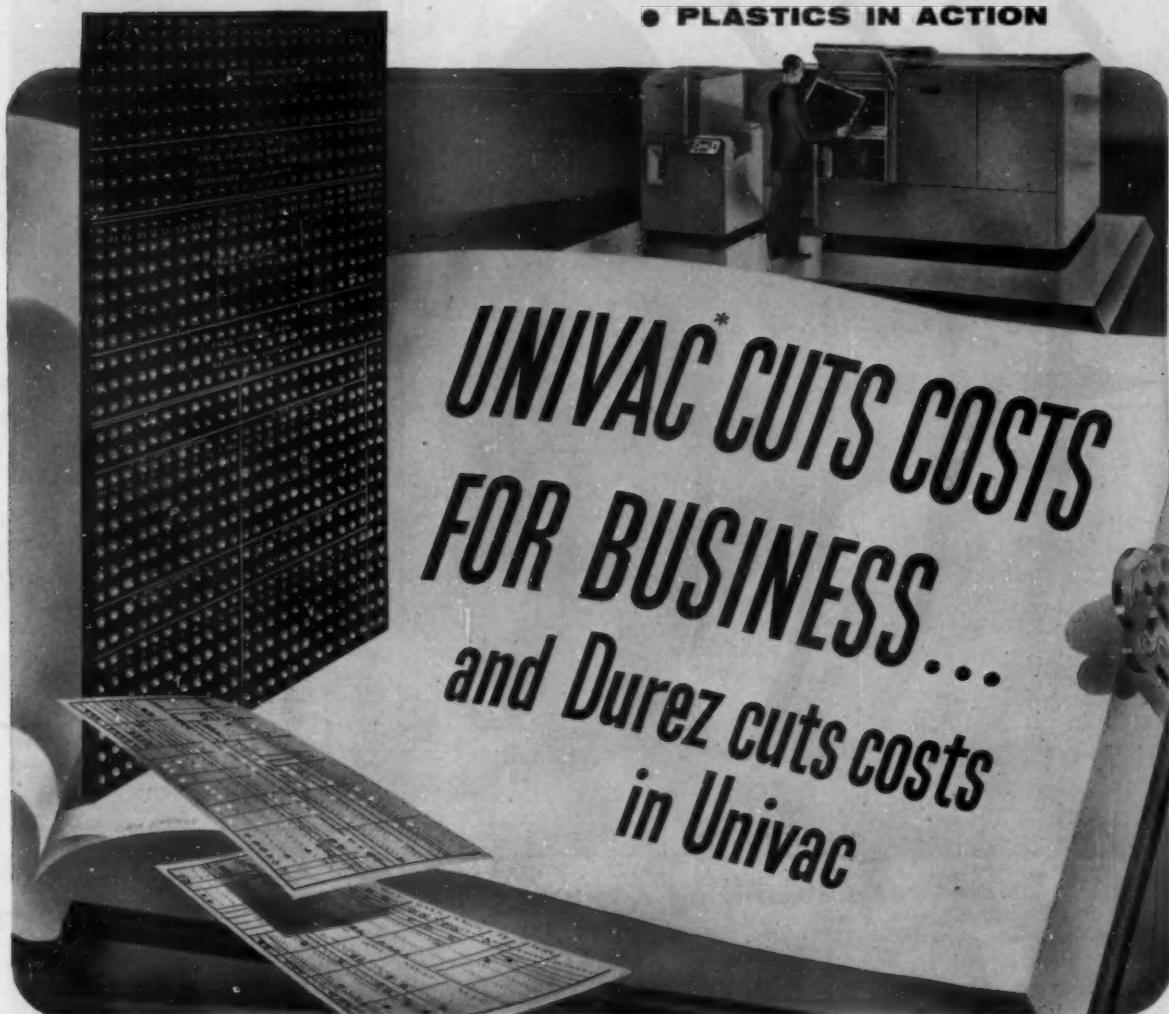
Warming pipes: In industries where viscous materials flow through piping, the rubber blanket heaters can prevent clogging. They are especially useful in temporary winter installations.

• **How They Work**—The blankets themselves are constructed in a three-layer sandwich. In the center is a paper-thin layer of electric conducting rubber. On each side of it is vulcanized a sheet of non-conducting Neoprene rubber. Two thin, flat metal conductors running along two parallel edges of the blanket are connected to the center layer. As the current flows between the metal strips, through the conductive rubber, heat is evenly produced over the entire surface of the material.

The two metal conductors are connected to a lead wire outside the blanket, and this is plugged into an electric source. The blankets can be heated up to 220 F and controlled by a thermostat. Different models operate on either 115 v. or 230 v.

• **Spot Repair**—If the blankets are punctured, you can repair them on the spot by cutting the hole to an even edge, then sealing it with a tape supplied by the manufacturer. The unit also can be cut across at right angles to the conducting strips and so made into two or more blankets. After cutting, the edges are sealed off with insulating tape, and new lead wires fixed to the ends of the conducting strips.

The electric blankets are available in a variety of sizes and can also be made to order for special shapes. Seven standard widths range from 3½ in. to 54½ in. with lengths varying from 26 in. to 126 in. In quantities over 50, the smallest standard size—3½ in. by 50 in.—costs \$9.80; while the largest—54½ in. by 126 in.—costs \$166.95. END



In the past few years, electronic data processing systems have put dollar and time savings of almost staggering proportions in the hands of business and industry.

These are machines of the highest precision in operation and in manufacture, which makes Durez phenolic the plastic you'd expect to find in them. Remington Rand's interchangeable programming panel board for the Univac 120 is an example.

Before Durez was used, the boards had to be drilled, milled, ground, punched, and dipped in varnish. Now all this is eliminated.

Alignment and dimension of 816 plug contact holes are automatic—molded in along with slots and other details. The required dimensional stability and electrical properties are inherent in Durez.

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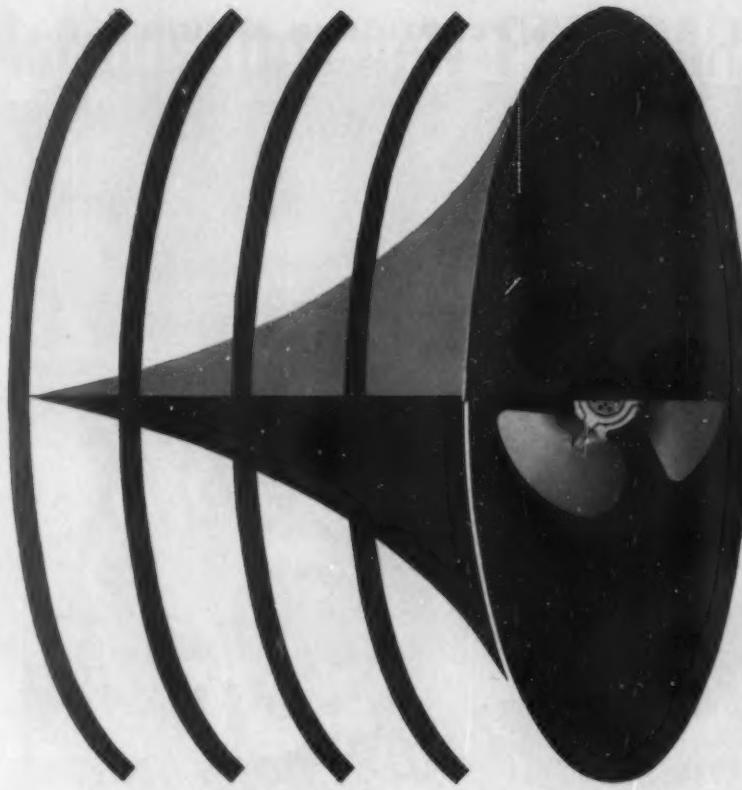
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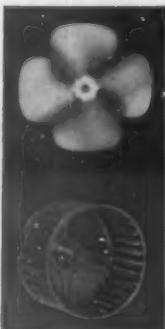




**HALF A MILLION
'VARIATIONS ON A THEME'**

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Torrington, Connecticut
Van Nuys, California • Oakville, Ontario



Stands a Chill

This new mercury vapor lamp (picture) is designed just to steam a little instead of cracking when hit with ice water or subjected to other rapid temperature changes. That's because it has an extra outside shell of break-resistant glass. The new Weatherduty lamp, developed by Westinghouse Electric Co., is expected to expand the use of mercury lamps for many industrial and street lighting jobs.

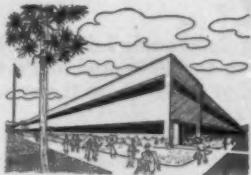
NEW PRODUCTS BRIEFS

A low-priced autopilot for small business and private planes has been developed by Federal Telephone & Radio Co., of Clifton, N. J. The rugged unit, which is built around a gyroscope and several small servo-motors, uses no tubes or transistors. A model for single-engine planes with coordinated ailerons and rudder, weighs only 17 lb. and costs \$1,995; another model for two-engine planes weighs 19 lb. and costs \$2,325.

Stopping ultraviolet rays is the job of a new industrial window material made by Firestone Tire & Rubber Co. The reinforced glass fiber and plastic panels are designed to protect stored materials, such as rubber, that would deteriorate under ultraviolet radiation. They do, however, let in as much as 50% of the visible light. The material can be made in any color and is said to be almost unbreakable. Price: about \$1 per sq. ft.

Piggyback pen: That's the name of Paper Mate's newest ball-point pen, which carries its own ink refill and replacement point behind the ink supply and point that are in use. If the ink runs low, or the ball and socket starts to wear out, it takes only a few seconds to make a switch. Price: \$1.95.

These are a few of the major companies that located plants in the "Heart of Industrial America" in 1955.



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Marion, Ind.



Celanese Corporation of America
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Olin Mathiesen
Chemical Corporation
Clarington, Ohio



Westinghouse Electric Corporation
Upper Sandusky, Ohio



General Electric Company
Roanoke, Va.



Mabey Chemical Company
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Champion Spark Plug Company
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Babcock & Wilcox Company
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BUSINESS ABROAD

TRADING WITH THE COMMUNISTS

1. The West Is Still Wary

● Russian leaders are using grandiose talk of trade as a diplomatic weapon. It turns out they chiefly want what the West won't give them: strategic goods.

● It's easier to trade with the Red satellite countries, British and U.S. businessmen find.

● But there's still the problem of dealing with a new kind of customer: the Communist bureaucrat.

In the new era of "competitive co-existence" with the Communist world, businessmen in the West are looking more hopefully for holes in the Iron Curtain, and the bosses in the Kremlin are at least talking big-deal. Yet free-wheeling trade between East and West is still a long way off, it seems.

To be sure, an increasing volume of trade is passing through gaps in the Curtain, chiefly to and from Red satellite lands. But either side is likely to pull the zippers shut at any suspicion of getting the worst of a deal.

This week, a U.S. machinery manufacturer is stumped by U.S. government disapproval of a deal that might give Russia strategic material in return for a new oil-drilling tool (page 135). And British middlemen in barter deals with Soviet satellites run into one problem after another (page 142).

• **Rising Interest**—American businessmen are showing more interest in selling behind the Iron Curtain. A few months ago, the Commerce Dept. was getting about 10 applications each week for licenses to export goods to the Soviet bloc; now the rate is up to 20 applications a week. The average value of the licenses that are granted rose in March to twice that of the previous 76 weeks.

In Britain, traders were eagerly going through the long shopping list that Russian Premier Bulganin and Communist party chief Khrushchev left behind after their visit to London (BW—Apr. 28'56, p149)—until spokesmen in Moscow pulled the rug out from under the trade offers.

If the Russians had really meant business, Khrushchev's offer to buy \$2.8-billion worth of British goods in the next five years would have multiplied last year's exports to Russia by seven. And British businessmen began counting on at least doubling last year's rate.

This week, however, Moscow made it clear that the rise in trade would amount to no more than 10% unless the British cancel their restrictions on export of strategic goods. Obviously, the Russians want chiefly the stuff that the West isn't yet willing to give them. That's the stumbling block, too, in rejection of Dresser Industries' oil well drill deal by Commerce Secy. Weeks.

• **Barriers**—Two things stand in the way of any major expansion of East-West trade:

- The free world's restrictions on exports to the Communist bloc. These have been eased a lot in the last two years, but an elaborate selective embargo system is still in effect—and will remain indefinitely.

- The Communist doctrine of economic self-sufficiency that both limits the bloc's willingness to trade with the outside world and its economic ability to do so.

There are some signs that the Communist bloc may ultimately turn more to world trade. Russia's lopsided development of industry at the expense of agriculture, for example, may require it to import more foods and textile fibers. And Russia's new use of trade as a diplomatic weapon may call for more business with the free world. As matters stand, though, the basic economic potential for expanding East-West trade remains small.

• **Moscow's Policy**—Ever since the first Five-Year Plan was introduced in 1928, Moscow has made a conscious effort to achieve economic independence. It has built its satellites' economy, as far as possible, on the same basis.

In the last generation, the Soviet share of total world trade has declined steadily, although the nation's economy has expanded dramatically. The decline began long before the West even thought of banning trade of strategic materials. In 1938, the U.S.S.R.'s share

of world trade was only 1.6%. In 1948, it was down to 0.89%, and in 1954-55 it dropped to 0.6%—about the same as Indonesia's share.

Meanwhile, Russia's trade within the Communist bloc was soaring. As each country came under Communist domination, the Kremlin enforced economic integration. Before the war, the countries that are now in the Soviet orbit did 9% of their business with Russia; last year, 82% of their trade was with the Soviet Union.

- **Cracks in the Front**—As long as the Communist governments hew to policies of self-sufficiency within their bloc, their ability to pay for any major increase in imports from the free world will remain sharply limited. Lately, however, Russia has allowed its satellites to divert more of their exports to the West instead of to the U.S.S.R.—in order to pay for essential food imports.

This week, a few cracks appeared in the Iron Curtain:

- Austria and Czechoslovakia began negotiating for a joint hydroelectric project on the Danube.

- Lloyd's of London neared agreement to insure Hungary's Danube shipping for trips into the Black Sea and Mediterranean Sea.

- Romania is dickering to sell bottled gas to Western countries.

- The United Nations Economic Commission for Europe is pushing an all-European payments union that would use Communist credit in Western countries to increase trade. However, Britain and West Germany oppose the plan.

- **Trade Controls**—The Russians like to blame free world controls for throttling East-West trade. The claim is a tenet of their policy in using trade as a diplomatic weapon. And it's true that international controls clamped down on dealings with the Red satellites at the height of the cold war, five or six years ago. Today, however, controls are no longer an important barrier.

The International Embargo List, adopted by 15 nations in an economic war against Communism, now contains less than 170 items of commerce, and the shipment of most of these is restricted rather than banned entirely. The U.S. government's "positive list" of strategic commodities that can't be shipped to the Red bloc has been cut to less than 1,000 items.

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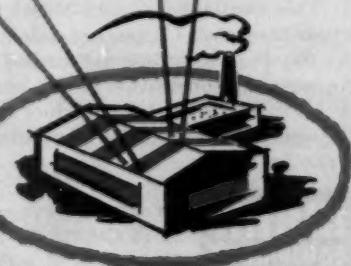
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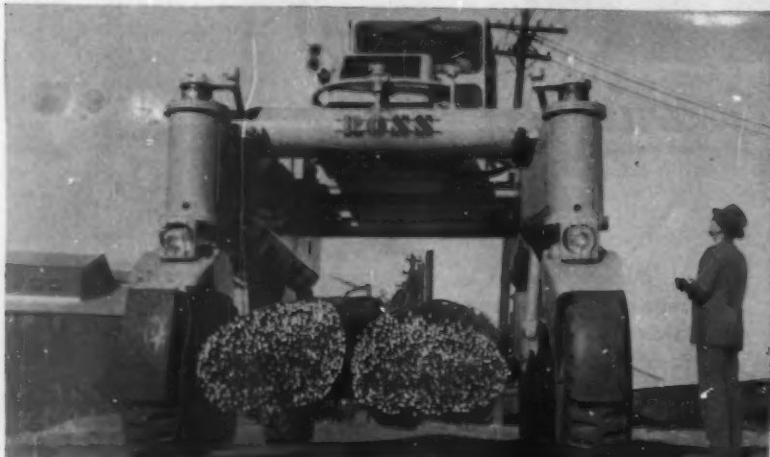


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ROSS CARRIER DIVISION CLARK EQUIPMENT COMPANY
Battle Creek 42, Michigan

the Soviet bloc can buy almost anything in the free world that it hankers for—if it's willing to pay the price.

- **Hand in Glove**—The controls on strategic goods mark probably an all-time record for international cooperation in peacetime.

In late 1947 and early 1948, the U. S. started tightening the screws on exports to Eastern Europe. Early in 1949, the Allies joined in talks about East-West trade controls, and in 1950 an international trade control body was set up in Paris. It has two standing committees, one to regulate trade with Eastern Europe and the other to watch over exports to Red China.

First, all the participating countries agreed on specific items that they (1) would not ship to Communist nations at all, (2) would ship only in limited, specified quantities, and (3) would ship under surveillance. Each nation established its own export licensing system.

Next, the group worked out a complicated method, called the Import Certificate Delivery Verification System, to make sure that strategic goods exchanged among themselves didn't somehow reach the Communists. Penalties for illegal East-West trade were written out in "transaction controls." If, for example, an American bought a strategic machine tool in West Germany and shipped it to Hungary, he could be fined or jailed in the U. S.

Finally, the Western countries agreed not to service ships that were moving cargoes of strategic value to Communist ports.

- **Quick Results**—The effect was impressive. Free world exports to the Soviet bloc fell from \$2-billion in 1947 to \$1.5-billion in 1950, with a marked shift from strategic to non-strategic goods. U. S. exports to Eastern Europe fell even more sharply, from \$340-million in 1947 to \$33.6-million in 1950; U. S. trade with China and North Korea was, of course, eliminated.

Two years ago, countries, such as Britain, that have to trade in order to survive began pressing for an ease-up in the restrictions. The International Embargo List was shaved from 260 items to 170. Countries began liberalizing their license rules.

The U. S., for instance, cut its "positive list" from 1,450 items to 787, and the Commerce Dept. gave out licenses more freely for other goods. Most recently, Commerce listed some 700 items—none of them presently important in U. S. trade with the Communist bloc—for which no export licenses will be required.

- **In the coming year, curbs on trade with Communist China will be slackened off, to bring them in line with rules for Communist European trade, but there's no immediate prospect for dropping all controls on China trade.**



JOHN O'CONNOR (center), Dresser Industries vice-president, talked business with Russians last winter. He still hopes Dresser can expand into Red territory.

TRADING WITH THE COMMUNISTS

2. U.S. Stops Up a Deal

More than one American businessman is thinking about trading with the Communists—if and when the signal comes from Washington (page 132). But the kind of troubles he will be in for—until the cold war thaws a great deal more—can be seen in a deal that Dresser Industries, Inc., of Dallas tried to make with Moscow (BW-Mar. 10 '56, p169).

Dresser got the Russians to agree to swap their turbodrill—which could be an important tool for the West's oil industry—for some items on the U.S. strategic embargo list. The turbodrill is a piece of oilwell equipment that U.S. manufacturers have been trying to perfect for 20 years. Dresser's engineers say the Russians have it down pat, that Austrian and French turbodrills now on the drawing boards or in production don't match the Russian product.

The rub is what the Russians want

in return. They are asking for some of Dresser's fine steel alloy drilling bits, and technical information on how they are made. These heat-resistant alloys are kissing-cousins of other U.S. metallurgical developments—such as alloys for jet aircraft engines—that State and Commerce Dept. officials think ought to be kept away from the Russians as long as possible. What Commerce experts and policymaking officials had to do was balance the benefits that the turbodrill would bring U.S. industry against the advantages that the Russians would get. This week Commerce gave Dresser a final no on a trade (page 165).

• Picking up Again—If Commerce had O.K.'d the deal, Dresser would have been back in business with the Russians. In the 1930s, its sales to Russia ran between \$3-million and \$5-million a year. After the war, Dresser tried to pick up where it had left off. The

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O'CONNOR says he's keeping up his Russian contacts for the day when he can do business with Moscow.

company managed to sell \$2.5-million worth of blowers and compressors to Poland and drilling equipment to Czechoslovakia, through the U.S. government and United Nations Relief & Rehabilitation Agency.

The Czech deal was never carried out. Prague had paid \$273,067 as a down payment on three portable drilling outfits, but Washington in 1948 imposed an embargo on strategic goods. Dresser couldn't get a special license to make delivery. The Czechs asked for their money back; the Internal Revenue Service demanded taxes on the same money as income; Dresser is fighting both demands in court, arguing that the deposit was forfeited as a cancellation fee.

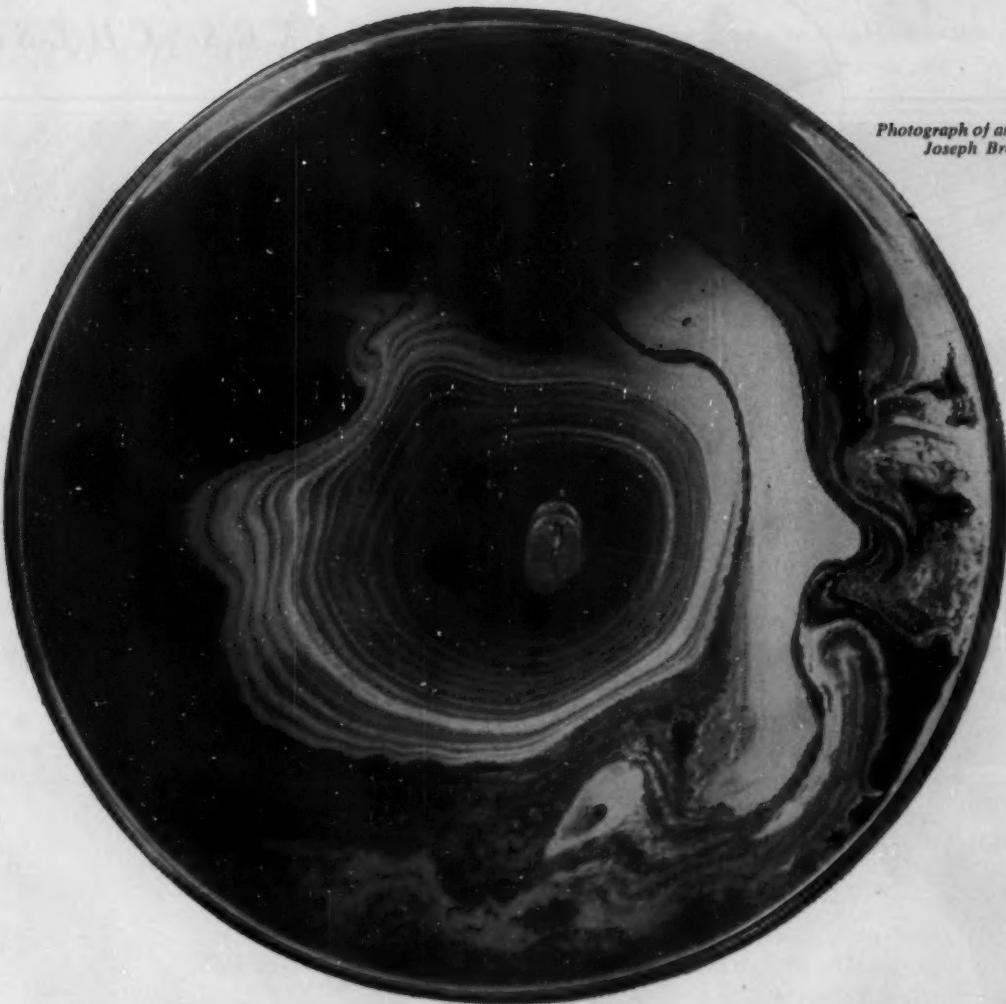
• **Expanding**—Dresser wants to rebuild its trade with Communist nations as part of its general expansion of business overseas. In its last fiscal year, the company sold 20% of its dollar volume—\$165-million—to foreign customers. About 77% of Dresser's products go to the petroleum industry.

Dresser has 38 sales and service offices abroad and is also represented in 60 other cities. To round out its overseas activities, it would welcome a chance to expand into Communist countries.

• **The New Drill**—John O'Connor, Dresser executive vice-president who handles most of the company's foreign negotiations, tried in 1947 to make a sale to Moscow, but nothing happened. O'Connor had just heard about the new turbodrill. He brought up the subject but couldn't coax the Reds into discussing it.

O'Connor's interest was whetted again in 1948 when he visited Romania and heard how successfully the new drill was operating in oilfields there. Next time he saw it was last year, in the

*Photograph of an odor by
Joseph Breitenbach*



Portrait of a Business Problem

You are looking at a rare photograph of a common business problem—an odor. Airkem scientists have found that accumulations of odors are present in offices, restaurants, hotels and hospitals, in fact everywhere. The effects of odors range from nuisance to aggravating annoyance and the cost is easily expressed in terms of lost sales and declining personnel efficiency.

The photograph was taken of the volatile material that makes up an odor as it was precipitated on the surface of chilled liquid mercury. The odor appears as a mono-molecular layer—only one ten-millionth of an inch thick! The odor source is a coffee bean.

Odors collect everywhere—on walls, fabrics, equipment—much in the same way as dust. They remain to create the stale air that makes the "tired atmosphere" in an office, or

the unpleasant impression of stale food, grease and cigarettes in a restaurant. To produce a fresh-smelling atmosphere, alert business management has turned to Airkem.

Airkem equipment and formulae have proved in thousands of installations the advantages of clean-smelling air. Merchandise sells better, customers are easier to please and more likely to return and personnel are more efficient in the Airkem-treated atmosphere. Write for the facts on how Airkem treatment of indoor air can help your business.



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- Please have Airkem Field Engineer call.

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What if the speedometer does still register zero, your brand new car has already done a lot of traveling. For automobiles aren't made in one place—they are made in many, and Chesapeake and Ohio is an essential link in the "assembly line" that brings the parts together.

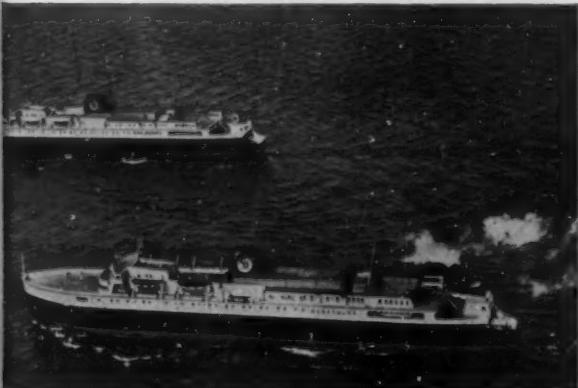
To the great automobile plants at Detroit, Flint, Lansing, C & O brings glass, chemicals, plastics from West Virginia and Michigan, steel from Buffalo, Chicago and the Ohio River Valley. Spark plugs, paint and rubber

from Ohio. Castings and steering gears from Saginaw. Wheels from Lansing. From Milwaukee come frames aboard C & O's Trainferry fleet. Chesapeake and Ohio in Ontario performs a similar service for the Canadian automobile industry.

Altogether over 2,000 items go into the making of an automobile. Everything from acetates to zippers is manufactured in Chessie's territory, and C & O is progressively expanding its capacity to better serve these various industries. At the same time Chesapeake and Ohio's industrial development program each year helps over a hundred industries find new sites in Virginia, West Virginia, Kentucky, Ohio, Indiana, Michigan and southern Ontario.

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Russian-occupied zone of Austria. When he went to Argentina, where Dresser has long had business connections, O'Connor finally got details on the drill from Argentine engineers who had visited Soviet oilfields.

• **The New Mikoyan**—Russian delegates to last year's Petroleum Congress in Rome gave more details in a report called Turbine Drilling in the U.S.S.R., which O'Connor also studied. Three weeks before he was to go to Russia last winter, O'Connor wrote, inquiring about the turbodrill, to Anastas I. Mikoyan, the man with whom he had talked fruitlessly in 1947.

This time, apparently, Mikoyan was in a trading mood. When O'Connor arrived in Moscow, he found everything set up for him. He was able to deal directly with the president of Machinoexport, the Soviet trust that produces oilfield equipment. And the two men reached an agreement.

In Iron Curtain countries, says O'Connor, if you can find the right man, you usually find him competent and willing to make a deal you can accept. "You just need patience, firmness, and need to know what you're talking about," he says. He adds that it's not easy, as he found out in 1947, to find the right man.

• **Washington Block**—O'Connor has had wide experience in negotiating all over the world as a financier and an engineer, and he is satisfied with the agreement he brought back from Moscow. He was unable to convince officials in Washington. Lower echelons at State and Commerce opposed the idea from the beginning.

They believe that the Russians don't yet have the alloys Dresser uses in its drill bits and that these ought to be denied Moscow as long as possible. O'Connor and Dresser Industries argue that the turbodrill we'd be getting would have equally striking advantages for U.S. oilmen.

However, some of Dresser's U.S. competitors discount the importance of the turbodrill. They say it seems to be useful only in certain situations.

O'Connor contends that the Russians' turbodrill has unique values, and that other European versions of it won't do. The Austrian drill developed by Mannesmann-Trauzl still is not in production, he says, and the Austrians are likely to have a patent fight with the Russians, whose drill they copied. And he is not enthusiastic about the drill produced by Etablissements Neypric in France, apparently from data that French engineers got in the Austrian oilfields after the Russians pulled out last year.

Though this swap failed (now) to go through, O'Connor apparently intends to keep up Russian contacts for the day when such deals may be possible. END

TRUCKING . . . Vital Transportation Link



SPECTOR . . . largest Chicago based trucker . . . standardizes on Fuller ROADRANGER® Transmissions

...for better performance . . . greater savings

Spector Freight Systems, Inc., largest common carrier with home offices in Chicago, is adding 104 new Fuller ROADRANGER Transmission equipped tractors to its fleet.

Referring to the 257 Semi-Automatic ROADRANGER Transmissions now used by Spector, and those to be added in the future, C. L. Lunt, Spector's Vice President, Operations, says: "We have standardized on the ROADRANGER Transmission for better over-all fleet performance and less maintenance . . . resulting, of course, in a substantial dollar savings. Also, our drivers overwhelmingly prefer

the Fuller Semi-Automatic ROADRANGER type Transmission."

Spector, whose gross revenue rose from \$1½-million in 1945 to an estimated \$21-million in 1955, knows the value of better over-all fleet performance. Spector drivers, who prefer Fuller Semi-Automatic ROADRANGER Transmissions, choose them because ROADRANGERS assure complete control of every driving situation.

With 8 closely spaced ratios available for any operating condition, drivers may select the ratio required with a *single lever*—without the arduous and time-wasting process of

gear-splitting. The result: faster trip time, lower fuel consumption, longer engine life, less driver fatigue . . . greater profit.

ROADRANGERS are the most efficient transmissions on the road today. See your truck dealer—ask him for full particulars on the Fuller ROADRANGER Transmission designed to meet your trucking requirements.



**FULLER MANUFACTURING COMPANY
TRANSMISSION DIVISION • KALAMAZOO, MICH.**



TRADING WITH THE COMMUNISTS

3. British Get Along With Barter Deals

FOR Joseph W. Gillon, a plane trip from London Airport to points East—and Communist—is all in a week's work.

As a partner in Lamet Trading Co., Ltd., an export-import company in London's financial district, Gillon knows the Communists' shopping list (page 132). He makes trips to East European capitals all year round.

This week, he was in Prague wining and dining with top officials of Koospol, the Czech trading company that handles grain exports and imports. Like any tourist he saw Hradcany Castle (picture, left) where the Czech president works. But most of the time he was sweating through long conferences in hopes of swinging a barter deal between the Czechs and Australians. If all goes well, the Australians will sell wheat to the Czechs, the Czechs will sell a variety of machines and other products to the Australians, and Gillon's company will take a nice profit as middleman.

Lamet is one of about a dozen British companies that handle trade with the Communists within the restrictions of the West's strategic blockade rules. It's neither the biggest nor the oldest in this business. But its operations are typical.

• **Four Years Old**—Lamet was organized in 1952 when Adam & Harvey,

Ltd., a British trading house, decided that the growth of its Iron Curtain business justified setting up a separate company. A French firm that had been specializing in trade with Poland put up a 50% interest. Adam & Harvey and Gillon—who had been working for it—each anted up 25%.

Since then, Lamet has been selling candy-wrapping machines and galvanized sheet to China in return for soya beans and bristles; tinplate, textiles, and machinery to Poland for rice sheds and steel; TV equipment to Hungary in exchange for aluminum ingots. The company also handles a small amount of non-Communist trade—for instance, Swedish cement to Kuwait, but Communist dealings are its bread-and-butter business.

• **Everywhere but Moscow**—Last year this business amounted to more than \$11-million. About 90% came from Moscow's satellites; the rest, mostly from China. So far, Lamet hasn't touched Russia—for various reasons.

The main one is that by the time Lamet got going, Russia had already established trade missions or agencies abroad. All along, the Russians also have preferred dealing directly with manufacturers overseas, instead of through a go-between such as Lamet.

Besides, Lamet's specialty is barter



IN LONDON, headquarters of Lamet, Gillon (left) and Kwass discuss Prague trip.

transactions. While the satellites, for lack of foreign currencies, trade primarily by arranging barter deals, Russia has earned enough currency abroad—and produced enough gold—to buy or sell around the world as it chooses.

• **Comfortable**—Even without Russia as a customer, Lamet seems to ring up nice profits and find plenty of room to expand its business with the satellites.

"We make a small profit on grains, a somewhat higher margin on engineering products," Gillon says. "Last year's profits were quite comfortable."

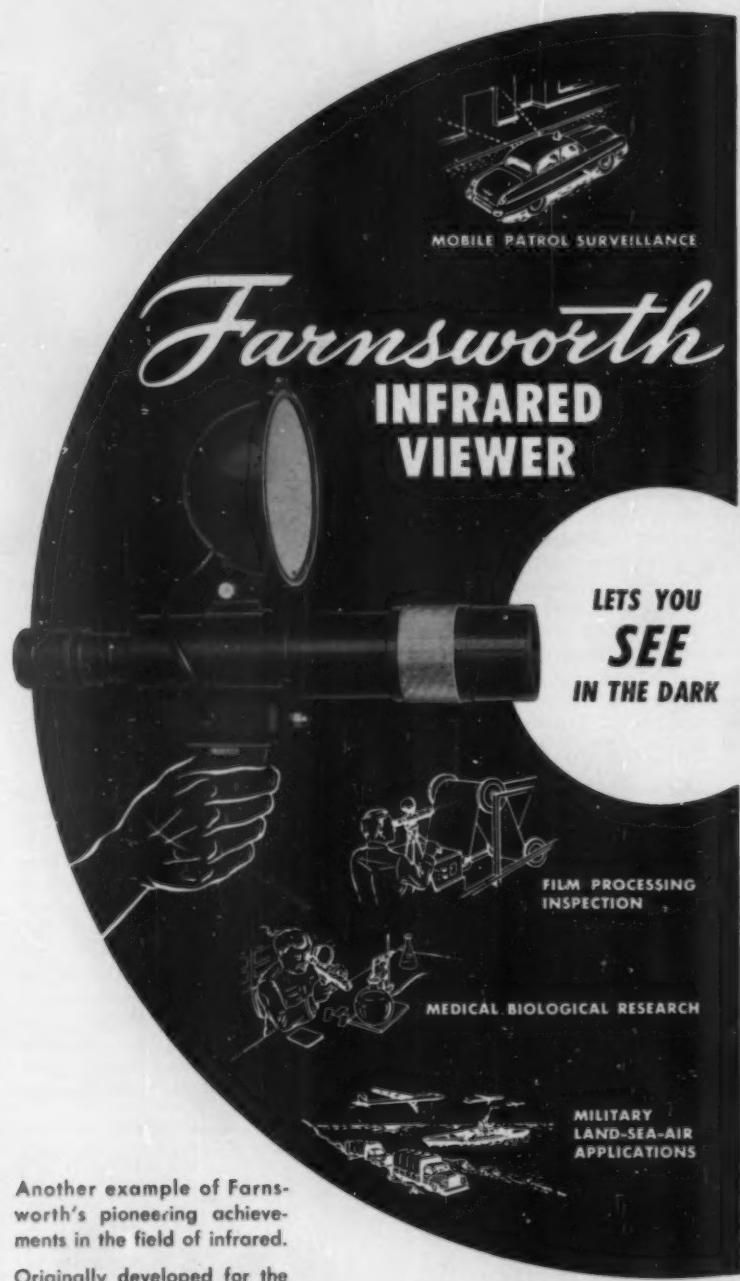
Lamet is the export agent in Britain for the state-owned steel companies of Hungary, Poland, and Bulgaria. Its year-by-year expansion has included part interest in Grain Storage (London) Ltd. and, a few months ago,



IN PRAGUE, Gillon talks with head of Czech grain trading company outside government office building. Then . . .



IN CONFIDENCE, over a drink, he discusses a wheat barter with women, who often hold key posts in Communist countries.



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RELAXING between negotiations, Gillon smokes with a Czech official.

formation of Lamet Shipping, Ltd. • Specialists—Lamet organizes its 20-man staff not by countries, but by commodities. That's because export-import business in Communist countries is almost 100% nationalized, with one state-run company usually responsible for all transactions in each commodity.

Occasionally Lamet clinches a contract right in its London office. Teletypes and telephone calls to and from Sofia, Prague, Warsaw, and Paris carry a lot of the daily workload. And on a typical day you might find Lamet entertaining Bulgarian trade officials in its board room—complete with brandy and cigars.

But more often than not, Lamet's 10 operating executives are on the road, talking face-to-face with the Communists. They travel, of course, to freshen contacts with key Communist officials. Yet the above-average frequency of these trips points up one of the chief headaches in East-West trade: the complications of each transaction from first contact to final contract.

The travel that goes into each deal is time-consuming. Gillon says, "You may spend a month or two sitting around in an East European capital." And, worse, it's Lamet's major expense. The company would just as soon pay for permanent agents to represent it in Communist capitals, but—according to Gillon—the satellites say no.

• Maze of Tape—Take a look at the travel—and patience—that went into a big contract that Lamet concluded with Burma and Poland last November:

In 1953, the Burmese explained their problem of rice storage to a Lamet executive in Rangoon. In 1954, Lamet submitted to Rangoon a cost estimate for rice sheds made in Britain. But the Burmese had only rice, which Britain didn't need, to pay for the



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sheds. G. R. A. Kwass, Lamet's Polish specialist, called Warsaw, asked the state organization CEKOP if it would build the sheds in return for rice.

Encouraged and with a consulting engineer in tow, Kwass headed for Warsaw. For several days he explained the proposal to the Poles, then waited two weeks for a bid. (The Poles said it would be handed to him in two days.) Then he negotiated for another two weeks. Finally—after the Poles said they weren't interested in Burmese rice—he departed for London.

On the way back he received a call in Vienna: The deal was on again. A month later, again in Warsaw, Kwass was ready to sign contracts. Then he discovered that, while the Poles would sell sheds, they wouldn't buy rice.

Three months later, after long-winded negotiations with a special Polish agency that handled rice purchases, Kwass almost had the deal in hand. No, there were still disagreements over the price of Burmese rice. Last November, Kwass finally settled the contract for a \$2.1-million barter—though even now the financial details are still being worked out.

"Our most difficult contract," Kwass says, showing a thick book of telegrams and a ledger listing \$22,400 in expenses.

- **Peculiarities**—Besides red tape there are other peculiarities in this barter business. Lamet executives must be fluent in East European languages (one partner speaks five, including Russian). Along with this, they must be equally at ease in talking either with high officials or peasant-type functionaries. In Czechoslovakia, Lamet negotiates much of the time with women, who hold top jobs.

Yet Gillon says: "Our transactions are like any other. There aren't unusual risks." Sometimes Lamet takes a loss on a contract just to help its relations with a country. But when there's a solid contract, it's usually big—and Lamet's cut is also big.

By acting as a principal rather than as an agent, Lamet says it can gamble on bigger risks, slice off larger profits, and settle damage claims and other problems quicker. The fact that it assumes legal responsibility for following through on a deal appeals to Western customers, Lamet says.

- **Branching Out**—The company is considering opening a New York office; it's looking for dollars to do this. It tried to sell Czech cement here a month ago, but didn't succeed. In fact, it probably took a financial licking by losing the option it had paid for.

Meanwhile, it is looking to future expansion of its rather small trade with China. Largest Lamet order there so far: \$196,000 worth of British galvanized sheet.

And it may make a try at Moscow. END

New Oil Fight . . .

. . . over imports is shaping up as Flemming relaxes rules, signals "updating" of 1954 formula.

Storm warnings for a new Congressional battle over oil imports are up this week. The signal: Defense Mobilizer Arthur Flemming's announcement that the Eisenhower Administration is ready to consider whether the "1954 formula" has been outdated. This formula calls for imports to remain the same percentage of U. S. crude production that they were in 1954.

The ODM chief, in a letter to importers this week, made the most comprehensive report on the imports controversy since last October. Then he called for a cutback of 7% on imports of crude oil from areas other than the Western Hemisphere.

• **Lowering Bars**—On the basis of a decision by the Cabinet Committee on Fuels Policies, Flemming is relaxing the rules immediately in two respects:

- Imports of crude into District 5 (the West Coast) won't be subject to the voluntary restriction program—because Flemming sees no sign of a production increase in the district, and feels higher imports are needed to meet growing demand. But he promises to act if imports get out of hand.

- Imports of residual oil for ships' bunkers or military use will also be exempt. The committee decided these have no direct relationship to the rest of the import program.

Crude oil imports from Western Hemisphere nations will also remain exempt, but the cabinet committee report warns against "any sharp increase."

• **Lining Up**—The State Dept. and some major oil companies have been urging a new study of imports on the ground that the U. S. producing industry is healthy, that too much restraint on imports will upset the ticklish Middle Eastern situation and impair—rather than strengthen—national security.

Any open liberalizing of the 1954 formula, however, is sure to create demands on Capitol Hill next year for a stricter law on oil imports. It's too early to tell how much steam such a drive would gather. That will depend largely on the sharpness with which U. S. producers react to a green light for higher imports.

Russell Brown, general counsel of the Independent Petroleum Assn. of America, is disappointed in Flemming's latest action. Only last week he had asked "positive action" for further import curtailment. END

Another reason why Hammermill Bond prints better, types better, looks better



How Hammermill's private eye helps make cleaner paper

THIS IS A WINDOW. It's in a pipeline at Hammermill. Back of it flows the pulp that goes into Hammermill Bond. And through the pulp a beam of light shines into an electric eye.

If the pulp starts to thicken, it cuts down the light striking the electric eye. And instantly, this private eye, devised by Hammermill, detects the change and signals a control valve to add more water. Just enough to bring the pulp back to the right, smooth-flowing consistency.

That's important. At the next step, the pulp is screened through tiny slots to get rid of impurities. When the pulp is the right consistency, only the desirable fibers get through. If it should become too thick, or too thin, even for just a moment, impurities could be squeezed through to end up in the paper as tiny dirt specks.

Tiny, yes! But at Hammermill our constant aim is to give you paper for your letterheads and business forms that is as free as possible of defects, however slight.

Using this photoelectric cell to help make clean paper is another example of

our many extra quality controls, that, together, make Hammermill Bond (1) print better, (2) type better, (3) look better. Hammermill Paper Company, Erie, Pa.

Printers everywhere use Hammermill papers. Many display this shield.



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Who is looking out for your lighting investment?

SURELY, you make it a rule always to operate with the best business information you can get. This is a dictate of sound business practice.

And certainly, when you invest in a capital item such as lighting, you should do it with the best professional guidance you can get—that of your architect and consulting electrical engineer. It's their job to keep you from making costly lighting mistakes.

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your building needs into realities . . . and how to bring you quality lighting with trouble-free performance and rock-bottom maintenance costs for years to come.

Realizing this, we at Sylvania make the professional style and quality of fixtures that your architect and your consulting engineer would be proud to specify. We urge you to take your lighting problems to them *first*.

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In Business Abroad

Engine Orders From France and Canada May Put Britain Back Into Jet Race

Britain's shaky aircraft industry—lagging behind the U.S. in the jet age race despite its technological advances—saw the glimmer of a new day this week.

British sources reported that Air France has taken an option to buy 70 Bristol Olympus jet engines to be used in 15 Boeing 707s it plans to order. The French flag carrier already has 10 Boeings on order, scheduled for 1959-60 delivery, equipped with American Pratt & Whitney engines.

At the same time, Trans-Canada Air Lines announced that Rolls-Royce Conway "bypass" jets would power four—and possibly six—of the Douglas DC-8s it is buying. For TCA, the combination of British engines and American airframes is old stuff: Its North Star airliners are reengineered Douglas DC-4s with Rolls-Royce Merlin engines.

These orders—if they jell—could mean two things: Britain would be able to get back into the jet race through the back door—with or without the ill-fated Comet. And the orders give Britain's Ministry of Supply, the iron hand controlling aircraft development, a way to finance the development of both the Olympus and the Conway engines. There had been talk that it would have to drop one or the other for economy reasons.

U.S. and Communists Step Up Their Rivalry for Southeast Asia

Happenings in Pakistan this week pointed up the continuing rivalry between the Communist Bloc and the U.S. for the economic affections of Southeast Asia. These events tell the story:

A state visit beginning this week of Pakistan Prime Minister Mohammed Ali to Peking and a new trade treaty with the Chinese Reds.

A new commerce and navigation pact between Washington and Karachi.

Pakistan's first Five-Year Plan—a triumph for private enterprise in spite of its planning concept.

Karachi reports say that Prime Minister Mohammed Ali will propose a five-year barter pact to the Chinese Communists—a quarter of a million bales of cotton for a half-million tons of coal. The Pakistanis this week signed a new agreement to buy \$6-million worth of Chinese coal to be paid for in cotton during the next year.

The new commerce and navigation act with the U.S. is ready for signing in Washington next month. It includes mutual guarantees of investment, repatriation of profits, facilities, preferential tariffs, and avoidance of double taxation. The pact has been three years in the making.

The Five-Year Plan—announced this week but gener-

ally understood for some time—puts the accent on private development. Only 20% of industrial investment, for example, will be in the public (government-owned) sector—and Pakistan policy has been to sell this off to private investors as soon as possible. The plan was drawn in consultation with a group of experts in which Harvard's Dean of Public Administration Edward S. Mason and his staff played a prominent role.

Western Europe Looks to Yugoslavia For New Sources of Hydro Power

Western Europe is turning to Communist Yugoslavia to help meet its growing requirements for electricity.

Now under negotiation is a \$400-million project whereby Yugoslavia would develop its plentiful hydro resources, then sell all the output to Italy, Austria, West Germany, and—in emergencies only—to Switzerland. Crux of the project would be construction of an interconnected grid of five power stations in Yugoslavia for generating 5-billion kwh. yearly.

The multilateral agreement, now firming up, calls for setting up a unique international company—made up of government agencies, private power companies, and private financial houses—to operate the power system. Included in the financing would be two Swiss banking groups that are linked with Brown-Boveri & Co. and several other big Swiss companies.

If the project is all European-financed, Italian, Swiss, Austrian, and West German equipment makers would split up the construction end. But if the World Bank picks up part of the tab—as the Europeans hope—then U.S. companies would have a chance in clinching large orders for generating and transmission equipment.

Business Abroad Briefs

Filip for Philippines: Firestone Tire & Rubber Co., with a \$4-million tire plant already planned for Cuba, now has a \$5.3-million plant for Manila in the works. Both plants will produce 100,000 tires yearly. . . . **Atlas Consolidated Mining & Development Corp.**, copper producer, is a newcomer on the American Stock Exchange—the first Philippine mining stock ever listed there.

The Mexican market: Hughes Tool Co. is the third drilling equipment producer to open a Mexico City office in recent months as a result of Pemex's intensified drilling program this year. . . . **Texas International Sulphur Co.** has found an estimated 5-million tons of sulfur under part of its 123,000-acre holdings on the Isthmus of Tehuantepec (BW-Apr. 7 '56, p170).

The Rothschild banking house—which opened last month in Canada (BW-Apr. 28 '56, p83)—is studying investment possibilities in Brazil, including construction of a titanium oxide plant, financial backing for the tunnel under Rio's bay, and construction of a tractor factory.

**An announcement of importance
to users . . . and potential users
. . . of printed circuits:**

New Taylor Copper-

Why Taylor Copper-Clad Laminates Help Capitalize the Full Potential of Printed Circuits . . .

Taylor's ability to use high purity rolled copper—in weights of one, two or three ounces per square foot—assures production of materials that will more satisfactorily meet industry's needs because . . .

Rolled copper surface is smoother (freer from pits, pinholes and imperfections) . . . more uniform thickness . . . no sacrifice in conductivity. Result: Consistently satisfactory etching at better production rates.

Taylor GEC Copper-Clad provides . . .

- Superior electrical and mechanical qualities for critical applications.
- High electrical stability over wide humidity range.
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- High insulation resistance and surface resistivity after etching.
- Ready punchability.
- Good, uniform copper-to-laminate bond strength.

Taylor XXXP-242 Copper-Clad provides . . .

- Cold punchability. For intricate punchings—warm to 150 F. max.
- High resistance to dip soldering temperatures up to 500 F.
- High insulation resistance and surface resistivity after etching.
- Translucence. Permits easy checking of circuit alignment on opposite side.
- Good, uniform copper-to-laminate bond strength.

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If you have tried copper-clad laminates with varying or unsatisfactory results, or if you have been shying away from them because of troubles others have had . . . recent developments at Taylor will interest you.

After months of research and experimentation, Taylor is now in production on two brand new copper-clad laminates that give you opportunity to realize—on a sound basis—the full potentials of printed circuit construction.

Produced by an exclusive Taylor process that permits the use of readily available, high purity rolled copper, these laminates are supplied in two grades—XXXP-242

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RADIO connects engineer of a long freight with the caboose, which may be three-quarters of a mile and two mountain bends away.



FREIGHT waits for the Zephyr. But it's

D&RGW:

Stockholders of that happy "mountain goat," the Denver & Rio Grande Western RR, are cranking up to celebrate their first year of independence. May 28 will be the anniversary of the formal return of their property, which since the road's bankruptcy in 1935 had been under the control of one or another set of trustees.

It's a pleasant picture that is spread before the liberated stockholders; the Rio Grande's 1955 operating report is loaded with all the financial fixings:

Gross revenues hit \$74.8-million, 7% above 1954 and the third best the road has ever enjoyed.

Operating efficiency was the best ever. Operating costs were only 61.9% of gross revenues—a showing that a mere handful of roads could match or shave. The 61.9% operating ratio compare with the Rio Grande's own 66.2% in 1954, its ratios from 64.9% to 76.9% in 1948-1953, and a high of 85% during the war when freight had to be



freight that provided 96.2% of the road's 1955 gross revenues.

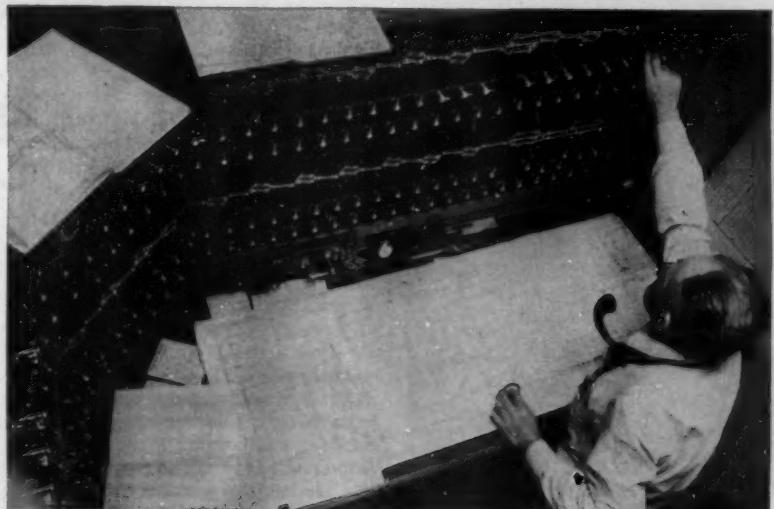
Over the Rockies the Hard Way

"hurled over the hill" regardless of the cost.

Net income also set a record, with \$11.4-million remaining after all charges, including payments to sinking and reserve funds. That was nearly 12% better than the \$10.2-million reaped in 1954, which had been the best peacetime year, and even shaded 1942's wartime record.

• **Building It Up**—The figures send a rosy glow through the stockholders of the 86-year-old D&RGW. But they cannot confuse the canny student of railroads into forgetting that the trustees of the captivity had done a very good job indeed for the 2,200-mile carrier whose tracks extend like a looped lariat across the loftiest peaks between Denver and Salt Lake City.

All through the years since the 1935 bankruptcy, the road was served by a series of able administrators, whose drive to build up the system could not have been bettered by any management



TRAFFIC on 286 miles of track is controlled by this mammoth central switchboard at Grand Junction, typical of road's advanced methods.

The line minimizes passenger business but shows off its spectacular California Zephyr.



Story starts on page 152

that the shareholders might have picked.

The first regime lasted from 1935 to 1947, with the Rio Grande being run by court-appointed trustees in bankruptcy. Then, nine years ago, the road was reorganized with theoretical control of the property reverting to the stockholders. But actually—as has been done frequently in recent rail reorganizations—the voting rights of the stock were vested for another eight years in a new group of trustees.

• **Experience**—The biggest break that the road got in its whole period of captivity was the appointment of the late Wilson McCarthy as one of the original trustees in bankruptcy. McCarthy, an Irish Mormon, rancher, and former judge, knew something about the road before he stepped in. He had been western director for the Reconstruction Finance Corp., and RFC was a major creditor of the D&RGW.

McCarthy, like the federal judge who handled the bankruptcy and many another dweller in the Rockies, believed that the Rio Grande had too long been the physical and financial pawn of the Western Pacific and the Missouri Pacific, which jointly controlled it. And for the 21 years in which he was the road's guiding spirit, his goal was the rejuvenation of the "two streaks of rust on a right-of-way" into a line run only for itself and the region it served.

• **History**—The Rio Grande started out in life as a narrow-gauge road; for many years its only main line ran from Denver south to Pueblo, and then westward to Salt Lake City, via the Royal Gorge of the Arkansas River and the 10,220-foot-high Tennessee Pass.

The physical picture began to change

in 1928, when the famous Moffat Tunnel finished boring its way through the Continental Divide north of Denver. Six years later the Dotsero Cutoff was also completed; this linked the western end of the tunnel mileage to the D&RGW's mainline to Salt Lake City via Pueblo.

All in all, 175 miles had been shaved off the D&RGW's road from Denver to Salt Lake City. And so—chiefly by working with the Chicago, Burlington & Quincy, the Missouri Pacific, the Western Pacific, and the Southern Pacific—it has become part of an increasingly popular transcontinental route from Chicago and St. Louis to the West Coast.

The development of the Rio Grande as a bridge line has been a massive factor in its prosperity. In the 1920s, less than 5% of its tonnage was picked up from and turned over to connecting roads. By 1940, the figure had risen to 25%, and is now well over 33%. Indeed, in the past few years, bridge traffic has accounted for nearly half of all revenues.

• **Heavy on Freight**—The post-1935 management cannot—and most emphatically does not—claim any credit for the boost that came from the growth of bridge business. Nor does it brag to its own account about another happy factor: the very small part that the perennially unprofitable passenger traffic plays in its total business.

This fact is sometimes obscured by the fact that the Rio Grande's tracks are used by that swift and luxurious "name" liner, the California Zephyr, which it operates jointly with the Burlington and the Western Pacific. Actually, though, the Rio Grande has only 12 daily passenger trains, whose total

BABIES get glad hand from beaming stewardess on Zephyr.

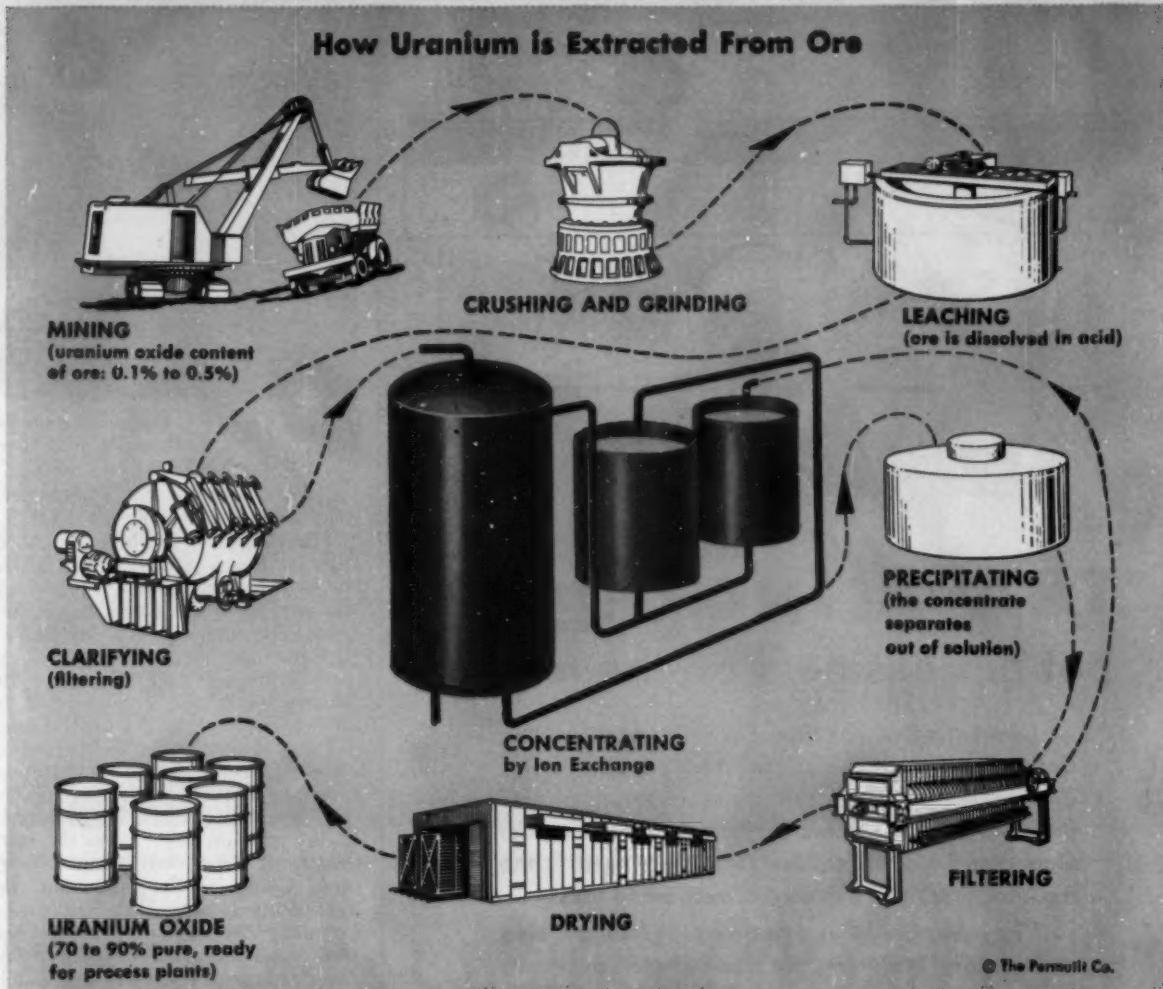


GROWN-UPS await Zephyr at Grand Junction station.

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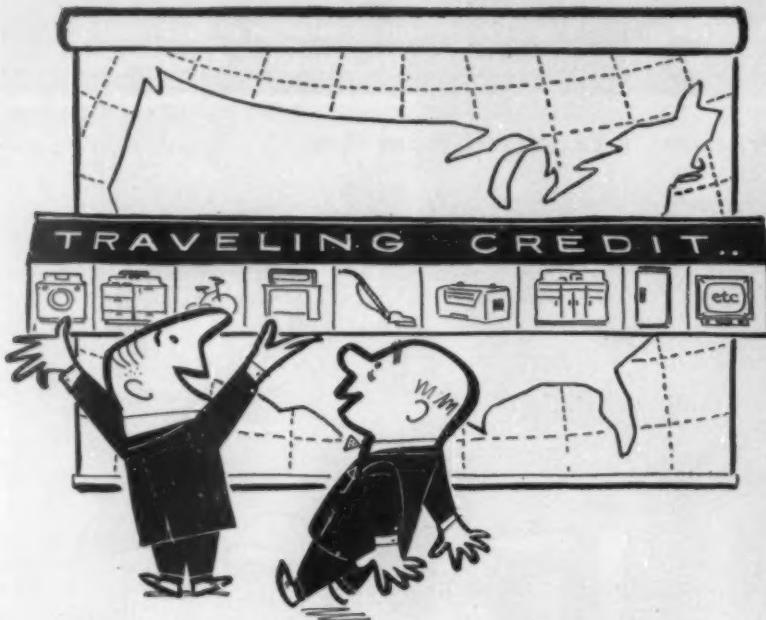
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contribution to the road's gross revenues last year were a measly 3.8%.

The D&RGW has been helped by still another non-management factor, the swift growth of the Rocky Mountain area, with booms crackling in Salt Lake City, and especially in Denver, for some time. And it's a help that the road is the only one that serves the uranium mines and processors that are mushrooming on the Colorado Plateau.

- **Enter McCarthy**—No matter how big a discount you allow for these gratuitous factors, you always get back to the fact that immense credit must go to McCarthy and his crew. From the start, they faced tremendous physical handicaps. Coiled in the mountains, the right-of-way is more than half curves; for most of the 1,900 miles of main line track the trains must struggle up and down steep grades. Despite these handicaps, the Rio Grande has been able to operate more "cheaply" than all but four of the nation's major railroads.

From the start, McCarthy put every penny he could scrape up into rehabilitating the run-down road. He spent millions on new road bed, rails, rolling stock, and motive power—notably diesels. He also installed a great deal of CTC (centralized traffic control), which allows something close to double-track operation over single-track lines.

- **Fruits of the Lab**—Research was always McCarthy's baby; he saw it as a knife to slice costs. Under his direction, the Rio Grande became perhaps the first road to set up its own research laboratory—a lab that has produced plenty. Indeed, admirers of the D&RGW say that the lab was the birthplace of two-thirds of the innovations and improvements that have been installed by the New York Central under the direction



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of A. E. Perlman—a Rio Grande old grad.

McCarthy and his men have gotten plenty of recognition, notably from the present stockholders—who do not include the MOP and the Western Pacific, purged in the 1947 re-organization. Last February, when McCarthy died, the stockholders without hesitation looked inside the organization for a new president. The choice fell quickly on Gale B. (Gus) Aydelott, a 41-year-old who had never worked for anyone but the Rio Grande and who had long been a right-hand man of McCarthy's.

* **The Market, Too**—The high opinion of the Rio Grande's management seems to extend into the investment world. Last week the road's common stock rose \$4 on the Big Board, to an all-time high of \$46.50. (The preferred, issued in the reorganization, has long since been retired.) Just eight years before, as the Rio Grande emerged from receivership, the common had gone beginning at an equivalent price of \$1.50, allowing for a 50% stock dividend and a 3-for-1 split.

Favorite GI Mortgage: Long and Easy Terms

The Veterans Administration last week announced the results of its latest probe into the fiscal anatomy of GI's buying homes on government-backed mortgages. The findings showed that generally veterans like easy terms and long maturities—especially the now extinct nothing-down 30-years-to-pay mortgage.

Last year, for instance, 40% of all GI mortgages were the nothing-down kind, despite the fact that the nothing-down mortgage was killed in July. And 44% of all veterans' mortgages had long maturities—26 to 30 years.

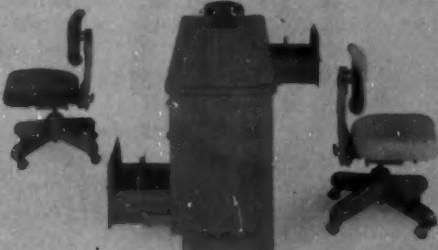
The VA's latest sample—of some 20,000 veterans of both the Korean War and World War II—showed the average GI home buyer was 32 years old, had an annual income of \$5,928. He paid \$11,800 for his home, including down payment. For the two years covered, 1954 and last year, total GI home sales came to \$12.4-billion. The average monthly charges amounted to \$96.75, or around 20% of average monthly income.

Despite the yen for easy terms and long maturities on their government backed mortgages, the veterans covered in the survey showed a strong desire to maintain some degree of liquidity. Those who made some down payment on their homes kept cash reserves equal to about 10% of the price of the home. And those who made no down payment had cash reserves averaging around \$1,207. **END**

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U.S. Steps Out

Last of Rohm & Haas minority stock seized during war is going up for sale, with interest lively.

Within a few weeks, the U.S. government will cease being one of the major stockholders in Rohm & Haas Co., Philadelphia, fast-growing plastics and chemical manufacturer. Last week, the Office of Alien Property filed a registration statement with the Securities & Exchange Commission for the sale of 79,213 shares of common stock—about 7.8% of all common outstanding—and 4,810 shares of R&H 4% cumulative preferred.

The sale, by competitive bid, should bring nearly \$40-million flowing into the government coffers. R&H common is currently selling on the New York Stock Exchange for around \$490 a share, the preferred around \$99 a share.

• **Bull Market Saga**—The government became a Rohm & Haas stockholder in 1942, when it seized under the wartime Trading with the Enemy Act some 34.5% of the company's common stock that was held by German nationals. The biggest single chunk of this was stock held in trust for heirs of Dr. Otto Rohm, a co-founder of the company. This stock made up the bulk of the first block of R&H holdings sold by the Alien Property Office after the war in 1949.

In January of that year, the government sold 197,697 shares of common—and the price, when compared to today's figures, makes R&H one of the real "growth-stock price sagas" of the current bull market.

The government got \$38.54 a share for the stock from a group of investment bankers headed by Wall Street's Kidder, Peabody & Co. and Drexel & Co. The group reoffered the stock to the public at \$41.25 a share, less than one-tenth the current price. At that time, the government also sold 15,816 shares of the 4% preferred, getting \$98.59 a share for it.

The success of the 1949 deal has prompted Kidder, Peabody to get into the bidding for this latest sale, even though prices have taken on quite a different complexion.

• **Tangle**—It's probable that the government would have closed out its portfolio of Rohm & Haas holdings long before this, if a court tangle had not held up sale of the remaining shares. In 1948, an R&H affiliate was merged directly into the top company through a swap of Rohm & Haas stock for that of the smaller company. The complication was this: Before the swap,

Neat trick

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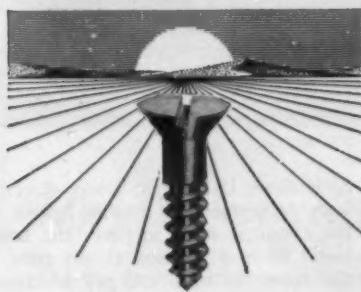
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some stock of the affiliated company had also been taken over by the Alien Property Custodian. Heirs of the late Dr. Kurt Albert, who had held this block, started suit eight years ago to get 72,213 shares of Rohm & Haas common from the government.

Thus, while the bulk of the government's holdings could be sold, at least 72,213 shares had to be held on ice until a final decision in the Albert case. That decision came on the first of this month, and was in the government's favor. The Alien Property office moved immediately, filing a registration statement with SEC 10 days later.

- Ready Market—There won't be any trouble selling Rohm & Haas common. The government says it has already had numerous "indications of interest" from individuals, Wall St. investment bankers, even the company itself.

It's not hard to see why there would be such a flurry of interest in a company that's still growing. The tenfold jump in market price of Rohm & Haas stock in seven years more than adequately reflects a tripling of sales and net income for the same period. Last year, the company's sales hit a record of \$161.6-million, up 22.5% over 1954. Net was \$17.7-million, up nearly 43% from the 1954 mark.

GE's Bond Offering Quickly Sold Out

General Electric Co. this week went to the public with an offering of debt securities for the first time in 36 years. The \$300-million in bonds were snapped up within hours.

Bond market pessimists, who had worried over the effect of such a large block on a market that had been glutted and weak, were depressed when the offering price was announced: 100 1/4% of par for 31% bonds, yielding 3.47 to maturity. They were convinced the bonds wouldn't sell at such a price, when good grade utility bonds were yielding 3.78% and better, and tax-exempt showed yields equivalent to well over 5% for higher bracket investors.

- Fast Sellout—But the bonds sold fast. Dealers estimated that at least \$25-million in orders were canceled when the price was announced, but others came flooding in from pension funds, investment trusts, and other institutional buyers. Just after the offering, the bonds traded at a slight premium. Some cautious Wall Streeters wanted to see how the bonds acted in the trading market before granting the success of the offering.

GE will use over half of the proceeds from the sale—about \$174-million—to pay off bank loans, put the rest into working capital. END

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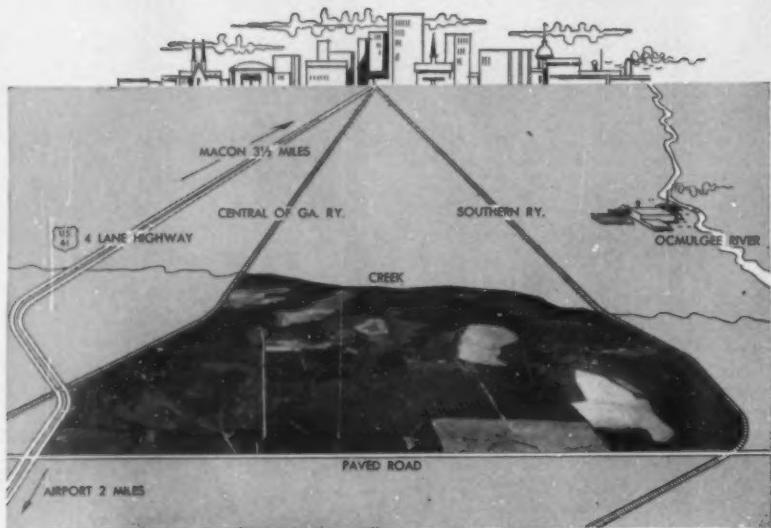
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FINANCE BRIEFS

The controversial Spence-Robertson bill became law last week. Designed to regulate bank holding companies (BW-May 12 '56, p152), it hits hardest at Transamerica Corp. Pres. Eisenhower noted that it "falls short of achieving its objectives because of various exemptions and other provisions."

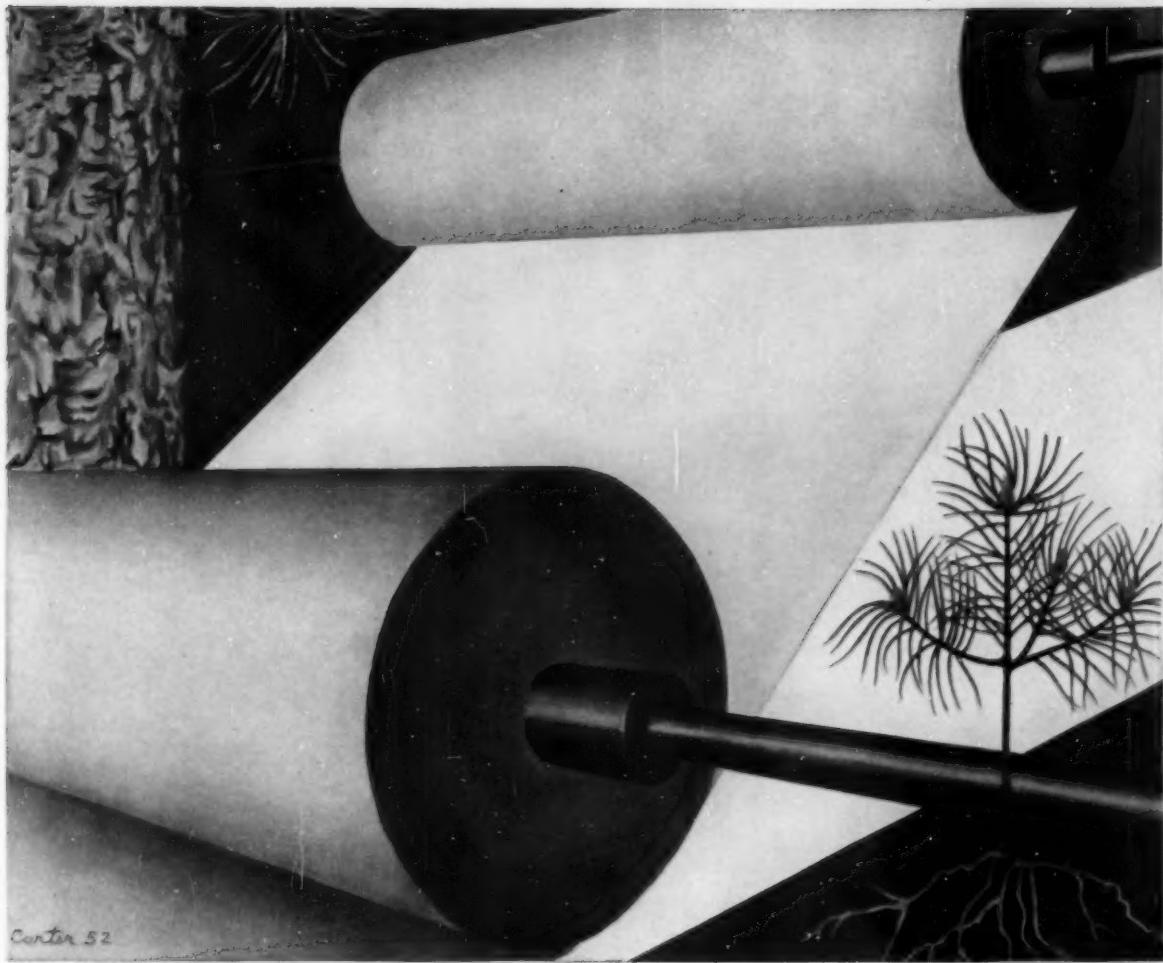
Retail automobile paper purchases are running 10% behind last year's first quarter for C. I. T. Financial Corp., biggest independent finance company in the country. And April-May purchases are estimated to be off 15.5% from the same period of 1955. Pres. Arthur O. Dietz said that earnings wouldn't be hurt too badly "because of the deferred income account balance."

Public holdings of savings bonds—Series E and H—showed a net increase of \$307-million during the first four months of this year. But April sales were only \$11-million ahead of redemptions.

Minneapolis-Moline Co. directors have O.K.'d a swap of new 6% convertible debentures for the company's 5½% first preferred stock. The exchange will be on the basis of \$100 worth of debentures for each share of preferred. Debentures are convertible into common stock at \$23 a share for the next five years, \$30 a share for the five years after that. Current market price: around \$18. The reason for the exchange: Interest on the new debentures will be deductible from taxes while dividends are not.

Split shoe: U. S. Shoe Corp. directors have recommended a 2-for-1 split in the common stock so that "the board could be in a position at any time in the future to issue and sell additional shares." Only 560,000 shares of stock are outstanding now, with 750,000 authorized. The new stock would be put on a \$1.80 per share annual dividend basis, compared with current \$1.50 payments. The company, closely held and its stock only sporadically traded, had \$33.6-million of sales, \$2.1-million of net income in fiscal 1955. Latest over-the-counter bid: around \$37.12.

The money squeeze is on Household Finance Corp.—and its customers. The big personal loan company reports that business has boomed the volume of notes outstanding to \$478-million at Apr. 30, up \$26-million since yearend. Projections for the year's volume have been raised from \$45-million to near \$65-million—and the company plans to do some borrowing of its own via a \$50-million debenture issue.



Carter 52

Illustration courtesy of THE FIRST NATIONAL CITY BANK of New York

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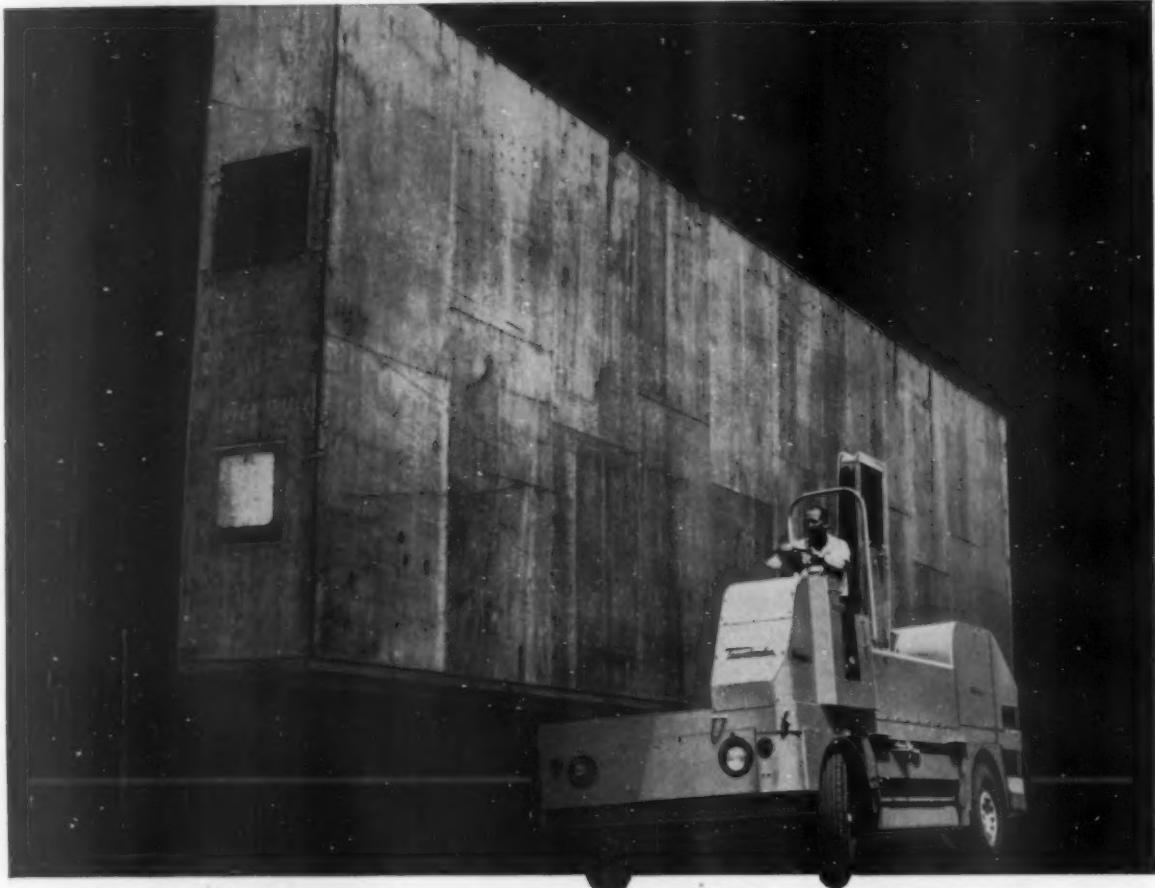
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INTERNATIONAL OUTLOOK

BUSINESS WEEK

MAY 19, 1956



The Kremlin is moving fast on its new strategy.

That strategy has two basic aims: (1) to win the atomic-and-missile race with the U. S. by mobilizing all Soviet industrial resources; and (2) to disarm Western Europe by presenting itself as a truly peaceful nation that has broken with its Stalinist past.

You can see the Russian design in these moves:

- **Cutting back the Red Army by 1.2-million men this week.** With last year's announced 650,000-man demobilization, this amounts to reducing Soviet forces by about 40%.
- **Abolishing the worst aspects of the Stalinite labor legislation.**
- **Promising to close down Soviet slave labor camps within the next 18 months.**

Timing and promotion of these moves was clever. They create headaches for Western cold war strategists. Nevertheless, the real Kremlin trick was to turn an internal necessity into external propaganda.

The Soviet planners had little choice. A shortage of manpower threatens success of the Sixth Five-Year Plan. The fifth plan—which ended last year—was fulfilled only by using 2-million to 3-million more industrial workers than originally planned.

Now Moscow needs 1.5-million new industrial workers each year. The Kremlin hopes to get part of them from demobilizing its armed services. More are to come from closing the slave labor camps—where productivity is low.

The Russians are liberalizing employment practices for similar reasons. The number of workers shifting jobs in Soviet industries reached alarming proportions in the last few years. That has cost production, of course. The Kremlin is now trying to control its labor force more with a carrot than a stick.

Military meaning of the Soviet demobilization is obvious. When you consider military-industrial developments, this isn't disarmament at all. In fact, it means that the Soviet Union is trimming fat—conventional armaments—in order to build up muscle—its atomic and missile potential.

This Russian move re-emphasizes the importance of Pres. Eisenhower's "Open Sky" international inspection proposals. Without such a system there can be no real international disarmament program.

The Soviet announcements may make it harder for the European powers to continue rearming under their present schedule. West Germany's Chancellor Adenauer, particularly, will have a hard time getting legislation to build a 500,000-man army.

Moscow's possible propaganda successes aren't the end of the story.

As Secy. of State Dulles pointed out this week, the importance of the Kremlin's latest moves is likely to depend on the long-range effects inside the U. S. S. R.—and its satellites.

No matter how the Kremlin rationalizes its latest decisions, they mean one thing: another knock for the Communist Party, already sliding from the all-powerful position it held under Stalin. And there is evidence that none of these decisions was made without dissension within the ruling hierarchy. In the long run, the Soviets may well pay in other ways for

INTERNATIONAL OUTLOOK (Continued)

BUSINESS WEEK
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what they gain in economic strength and propaganda. The net result could be an intensifying of the ferment that has been rising in the Kremlin and through the Soviet state since Stalin's death.

In Poland, the post-Stalin ferment is creating more noise and more effect than in Russia itself, or in the other Soviet satellites.

Warsaw has purged outstanding members of the former Stalin-type regime. Important changes in economic planning—to favor the consumer—have been announced. Censorship has been loosened. The Communist Party has engaged in so much self-criticism that it has incited ever-present anti-Russian nationalism. Observers on the scene are guessing that even the Russian overlord, Defense Minister Marshal Rokossovsky, may have to go.

The fate of Socialist Guy Mollet's French government is in the hands of the Kremlin this week. Mollet is visiting Moscow now. If the Kremlin should decide that it has no more to gain by keeping him in power, the French Communists could bring down his government any time they want. Mollet does not have a majority without them.

Mollet is already having troubles with his own party and the Socialist trade unions. They are calling for a peaceful solution to the Algerian war. But there is no sign of a compromise settlement—or of a French military victory.

If Mollet falls—either because of the Communists or a division in his own party—it will not be just another postwar French cabinet crisis. This time it may be the death of the Fourth Republic. What would follow Mollet can't be prophesized. But wartime leader Gen. Charles De Gaulle is again the center of speculation as a candidate for a conservative dictator.

Prime Minister Anthony Eden's government—already under heavy fire at home for its Cyprus policy—had a new colonial problem this week. Negotiations between London's Colonial Office and Singapore's Chief Minister David Marshall were broken off in a bitter mood. Marshall is asking the British for complete local autonomy. But London is concerned about the colony's importance as a base. It protects Britain's lifelines to Australia and New Zealand. Downing Street doubts whether Marshall's Labor Front, an anti-Communist Socialist party, can hold out against Singapore's strong Chinese Communist movement. Now—with the breakdown in negotiations—there's danger that Marshall's government will give way to the radicals.

Washington will stand pat on security controls on trade with the Communists, despite pressure for their relaxation.

The policy was reaffirmed this week when Commerce Secy. Sinclair Weeks rejected an application by Dresser Industries, Inc. of Dallas (page 135). It called for a swap of U. S. technical data on rock drill bits for rights to manufacture a new Russian turbodrill.

Delegates to the General Agreement on Tariffs & Trade (GATT) at Geneva packed up and went home this week. Verdict: a job well done. Nearly 60 bilateral pacts are expected to result, reducing tariffs on trade that last year amounted to \$2-billion.



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LABOR



KEY DELEGATES to ILO—George P. Delaney for labor, Asst. Labor Secy. J. Ernest Wilkins, Charles H. Smith, Jr., for employers.

Now ILO Rows Are Up to Them

This week, Labor Secy. James P. Mitchell emerges as victor in a head-on clash with the State Dept. over U.S. policy in the International Labor Organization—the United Nations specialized agency that aims at raising world working and living conditions.

The argument was over how much support the U.S. should give to an ILO proposal to outlaw forced or "slave" labor. The issue will come up at ILO's annual conference, meeting at Geneva in three weeks, in a debate on the report of a special commission that found forced labor is used "as a means of political coercion or education" in 12 countries—mostly in the Russian orbit.

The fate of U.S. participation in ILO—already under strong fire on other issues—could be further threatened by this latest squabble. A lot depends on the handling of the disputed questions by the three men in the pictures above—key U.S. delegates to ILO.

• **Battle**—The State vs. Labor clash got to the White House before it could be settled. Here's how it started: A couple of weeks ago the State Dept. broke a long silence on the forced labor question. Its representative told a Senate committee the State Dept. favored outlawing slave labor, but wouldn't support an ILO "convention"—an action that, when ratified by governments, is almost as binding as a treaty (BW—May 5 '56, p171).

It seemed, however, that State would go along with an ILO "recommendation"—which doesn't require ratification and serves only as advice or guidance—or with a convention that merely placed

an international boycott on goods made by slave labor.

That wasn't enough for Mitchell. He wanted the U.S. to take the lead for a convention that would go all the way and actually ban forced labor. When the issue got to the White House, Mitchell won a signal victory. Last week, he announced U.S. support of an "appropriate convention" that would:

- Outlaw forced labor, and
- Specifically prohibit in international trade the products of forced labor.

Though there's a loophole in the term "appropriate convention," this almost completely reverses past U.S. policy on a forced labor convention. Some employer spokesmen say State's stand is unchanged—but for the moment at least, Mitchell's view prevails. Asst. Labor Secy. J. Ernest Wilkins (picture) will represent the Labor Dept. at Geneva next month. David W. Wainhouse of the State Dept. will be the second government delegate.

• **Gompers' Brainchild**—ILO and the controversy raging over it (BW—Jan. 28 '56, p150) are hot topics today among both employers and labor unionists. But the chances are that many arguing about it couldn't tell you just what ILO is and what it does.

Probably few know that Samuel Gompers, father of the American labor movement, might also be called the father of ILO. He was chairman of the 1919 committee that drafted ILO's constitution for incorporation in the Treaty of Versailles. ILO became part of the League of Nations. In 1934, the U.S.

joined. In 1945, ILO became associated with the new U.N. as a specialized agency—keeping its autonomy.

• **Corporation Setup**—Today, most international bodies have only governments for members. ILO's setup is different—it's tripartite. This means that employers and workers in member nations each get one delegate with a vote apiece; governments get two delegates, each with one vote.

Organizationally, ILO is like a corporation:

- The International Labor Conference corresponds to a stockholders' meeting. Delegates from 71 member countries meet annually to draft conventions or recommendations, adopt a budget, hash over policy questions, and hold informal bull sessions where they often work out solutions to tense international business problems.

- The Governing Board is like a board of directors. Meeting three times a year, the 40 members oversee ILO activities, handle committees and special technical commissions, elect the Director-General. Ten chief industrial nations, including the U.S. and the U.S.S.R., are automatically on the board.

- The International Labor Office—the officers and employees of the corporation—handles the day-to-day ILO work, does research, publishes documents, reports, bulletins. Headed by the Director-General—since 1948 he is David A. Morse, former U.S. Asst. Labor Secy.—the secretariat draws its staff of over 600 from some 50 countries. ILO pays their salaries.

- **Slogans and Work**—Like many inter-



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national bodies, ILO has elements of the debating society, the propaganda forum. Any issue is likely to degenerate into a slogan-flinging session.

But it has its hard, pragmatic side, too. Its experts aid newly industrialized nations to boost productivity. Its researchers study how the European Coal & Steel Community can improve labor-management relations. Technicians teach in Greek vocational schools, show Ceylonese handcraftmen how to make finer goods with their simple tools and Israeli farmers how to raise output. Seamen, especially, enjoy better shipboard conditions because of ILO.

- Critics—But there's still strong criticism of ILO from some quarters in this country. One of the earliest, and loudest, critics is William L. McGrath, president of the Williamson Heater Co., Cincinnati—and a former ILO employer delegate.

In 1954, when Russia came back to ILO, a group of anti-ILO employers seized this move as a long-awaited issue that would arouse public interest. Under ILO rules, any U.N. country may simply declare itself in; this is what Russia did. (Director-General Morse had sharply rejected an earlier Russian notification of entrance because it attached two conditions.)

Anti-ILO forces fired their first salvo at the 1954 conference when Russia sent delegates. At that time, a still-raging fight broke over functioning of the tripartite system. McGrath, backed up by other employer delegates, charged that Red employer and worker delegates were actually government mouthpieces. Despite protests, these Iron Curtain delegates gained deputy membership-vote but no vote—in 1954 and again in 1955.

- U.S. Money—Today, McGrath and his supporters charge ILO with being dominated by Communists and Socialists, serving as a propaganda forum for Communism, and attempting to interfere in internal affairs. Further, they assert, the ILO staff "by and large" is devoted to "statist and Socialist ideologies." Since the U.S. foots 25% of ILO's budget—the U.S. contribution averages nearly \$1.75-million a year—this group maintains we're paying for Communist propaganda. If Soviet bloc delegates are seated, these forces demand that the U.S. get out of ILO and stop contributing. The U.S. pays a smaller share in the ILO than in other U.N. agencies.

Generally, most employers are indifferent to ILO. McGrath and many of ILO's opponents come from traditionally isolationist Ohio, from which came also the proposed Bricker Amendment to limit the President's treaty-making power. Last month its author, Sen. John W. Bricker (R-Ohio) successfully tacked onto a Senate bill a rider

freezing U.S. contributions to ILO at their present \$1.75-million level as long as Iron Curtain employer and worker delegates have ILO roles.

• **Support**—There's some difference of opinion among employers, though, as to whether the time has come to quit competing in ILO. J. D. Zellerbach, president of Crown Zellerbach Corp. and ILO employer delegate from 1945 to 1948, brands charges of ILO Communist-domination as "not true." Withdrawal by the U.S. would be "morally and politically indefensible," Zellerbach declares.

The Catholic Assn. for International Peace urges continued U.S. participation, as do such employers as Chmn. Irving Salomon of Royal Metal Mfg. Corp., and Chmn. Paul G. Hoffman of Studebaker-Packard Corp. AFL-CIO and its ILO representative, George P. Delaney (picture, page 169), favor staying in and fighting the Communists.

• **On Trial**—McGrath's successor as head employer delegate is Charles H. Smith, Jr. (picture), president of Steel Improvement and Forge Co. of Cleveland. He's keeping an open mind about ILO, but says he'll have to be shown how the U.S. profits from membership.

The U.S. Chamber of Commerce and the National Assn. of Manufacturers, which jointly nominate the employer appointed by the President as delegate, says they have placed ILO on a year's trial. If employer delegates from the Soviet bloc participate in 1956, these two bodies will withdraw.

• **Chances**—Questions of government domination of delegates are sure to come up at Geneva next month. On the agenda will be a 2,500-page special report on the issue. It concludes that while delegates from some nations may not represent employers and workers as the Western world knows them, these delegates may serve a definite function in ILO.

There's little chance that Iron Curtain delegates will fail to gain at least deputy status. Under international rules, arguments against seating delegates can't be raised again unless new facts are introduced; the facts got a thorough going-over in 1954 and 1955. Also, no final action will be taken on the special report.

• **Alternatives**—If the Chamber and NAM withdraw, the President will have to turn to other employer groups to pick nominees. Under ILO rules, he must appoint worker and employer delegates "in agreement . . . with the most representative" organizations. The President might turn to such organizations as the Committee for Economic Development or the American Iron & Steel Institute. If there were no employer delegate AFL-CIO's Delaney would lose his vote, since a worker vote must be offset by an employer vote. END



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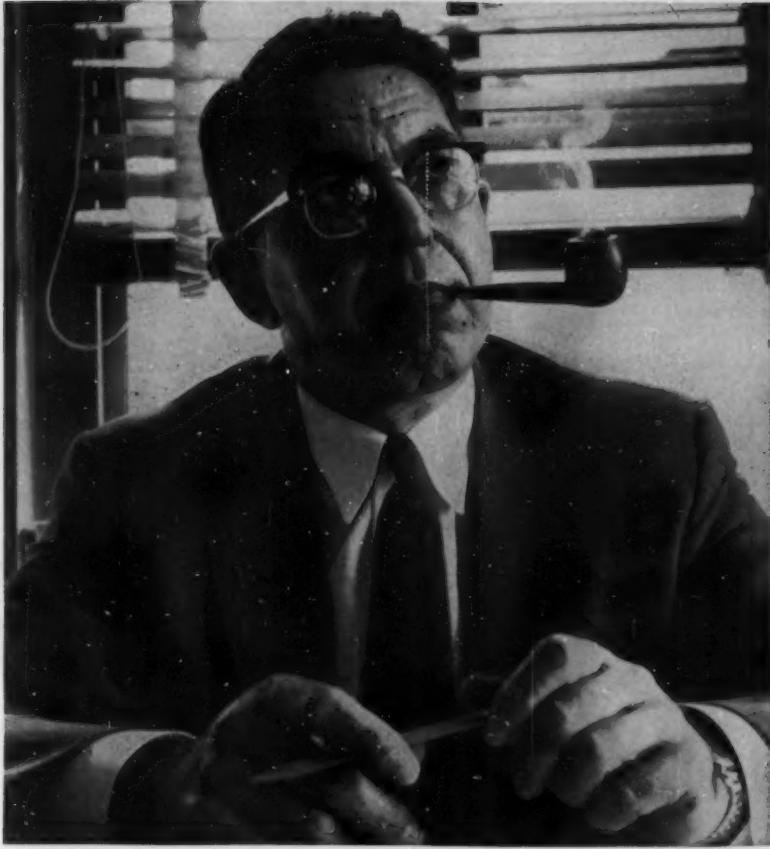
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ARBITRATOR William E. Simkin has touchy job of settling 35 strike cases, as . . .

Westinghouse Tension Lingers

With fate of suspended strikers not yet decided, promised "fresh start" in company-union relations makes little headway, and feelings within union run high.

When company and union negotiations reached the strike-ending settlement at Westinghouse Electric Corp. plants two months ago (BW-Mar. 24 '56, p28), they made plans for easing the tensions that led into, and mounted, through the 156-day walkout. This week, the tensions were far from abated; they threaten, in fact, to linger for many months.

Sporadic outbursts of violence between union members, and continuing contests between management and the International Union of Electrical Workers over striker penalties keep alive the memory of the bitter strike.

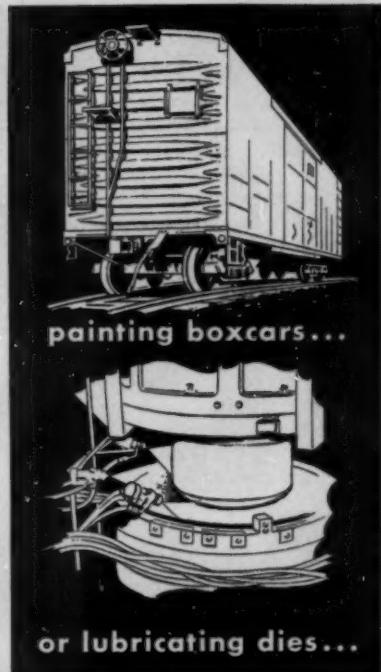
Feelings run high between IUE members who remained on strike through the five months and those who returned to work during the walkout. The trouble centers in the Westinghouse plant at Sharon, Pa., a union-indoc-

trinated city, where name-calling threats, damage to automobiles, and other reprisals are the fate of the back-to-work employees. In other plants, they get the silent treatment—nobody has an unnecessary word for them.

Along with troubles inside the union, company and union officials have found their own points of continuing disagreement. Negotiations have failed to resolve the fate of 36 strikers indefinitely suspended on violence charges, and job rights of all but one have ended up in the hands of the arbitrator.

Arbitration hearings are already under way, and will run at least another month. They're being handled by veteran arbitrator William E. Simkin of Philadelphia, an associate of Dr. George W. Taylor, who helped work out the Westinghouse settlement.

- Fresh Start—But Slow—Westinghouse



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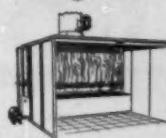
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"...it's no surprise that hostility lingers between strikers and non-strikers . . ."

STORY starts on p. 173

and union officials recognized that they might run into trouble when they signed their five-year contract. Though bitter antagonists throughout the walkout, they pledged to start afresh to improve their relations and set up these plans:

- A series of meetings between Westinghouse Pres. Gwilym Price and IUE Pres. James B. Carey. An understanding between the two top officials was viewed as a basic step in improving the company's labor relations.

- Discussions at the plant level between local company and union officials on resolving the proposed discharges. Two other interim steps before arbitration were provided, but these were dropped when a compromise seemed impossible, and Simkin was called in.

Price and Carey have held their first conference, a dinner meeting in Pittsburgh. But if there has been any meeting of minds, it isn't evident in the day-to-day relationship. Both sides are keeping a tight lid on what happened.

- **Hostility in Union**—It's no surprise that hostility lingers between strikers and non-strikers. The fact that Westinghouse plants stayed open and took back a sizable number of union members guaranteed severe tensions when the strike ended and all were back on the job side by side.

The vandalism at Sharon is probably a combination of two factors: (1) a heavily industrialized city with union sympathies, and (2) the ratio of strikers to back-to-work employees. Other plants showed either far more returnees, or else none at all. In Sharon only about 350 out of 6,000 unionists worked during the strike and so became targets for the rest.

- **Disputed Cases**—With this worker ferment in the background, Simkin's arbitration role is even more touchy. In Sharon, for instance, union members will be watching the fate of an IUE international officer, Walter Phillips, on whose discharge the company insists. He's the highest union officer facing dismissal.

In the preliminary local discussions, Westinghouse agreed to reduce the firings of 10 workers to suspensions, ranging from 30 days to one year, and reinstated one of the 36 threatened with dismissal. However, IUE officials declined to settle for suspensions and insisted that all 35 cases must be arbitrated.



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These penalty cases are confined to six Westinghouse plants. Simkin has already heard the nine cases at Sharon, and the remainder of the hearings will carry over into June. Simkin's schedule calls for hearings at Westinghouse plants in Columbus, Ohio, beginning May 26; Lima, Ohio, June 5; Union City, Ind., June 11; and Mansfield, Ohio, and Pittsburgh, June 18.

When the hearings are over, and the decisions are handed down, there's likely to be further union reaction.

- How Arbitrator Works—Simkin was picked for the job by Federal Mediation Director Joseph Finnegan from a list of 51 arbitrators submitted to both sides. Westinghouse and IUE rated Simkin acceptable, and agreed to share the \$150-a-day rate and expenses. But they couldn't come to an agreement on methods of operation; they finally decided to leave details up to the arbitrator.

Here's the way the arbitration setup works:

- Simkin holds hearings at the localities where the firings occurred. Both sides present witnesses in oral testimony with the hearings running from two to four days. Written briefs are submitted later.

- Decisions may be handed down quickly on clear-cut cases, but the majority will probably be held up until all are ready. Westinghouse wanted the decisions announced in a package, the union on a case-by-case basis—but how it's done is up to Simkin.

- Clues—The Westinghouse arbitration system closely parallels the handling of discharge cases growing out of last year's Southern Bell Telephone strike, which ended with 238 firings (BW—Apr. 14 '56, p60). Hearings of the Southern Bell cases have just been completed, more than a year after the strike, and 181 decisions are now in. The count shows 138 returned to work with suspensions ranging up to 14 weeks, and 43 discharges upheld.

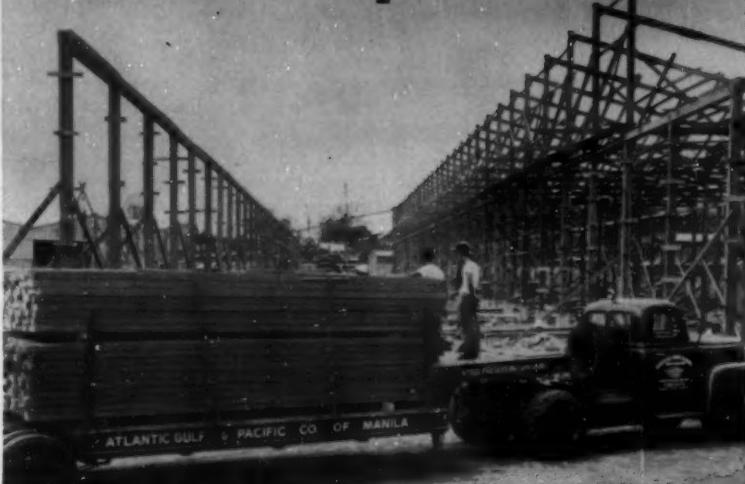
The arbitrators' action in Southern Bell, spelling out the strikers' actions that merit discharge and those that allow for reinstatement, may provide clues to what may happen in the Westinghouse cases.

- Outlook—Officials of the Communications Workers of America claim many who lost Southern Bell jobs are being hired by some of the independent telephone companies because of their skills.

However, IUE officials profess it will be difficult to find jobs for any of its discharged members, arguing that they will be "blacklisted" in the industry. Since many of the cases involve the hard nucleus of union officers, the final decisions on their fate threaten to keep alive the employee dissension at Westinghouse. **END**

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Has your union demanded "lonely pay"? It might. If it does, it won't be the first time an American union has picked up a British idea and phrase.

The workers at the Cheshire (England) plant of Shell Oil and Esso are asking for a raise because the works are being automated. The extra amount they want they call "lonely money"—compensation for losing the companionship of nearby workmates.

• Birth of "Strike"—The new phrase takes its place in a long and colorful list of British-coined labor slang. Most of it stays in the tight little island. But some has made the transatlantic jump and is in common usage here. Perhaps the best-known of all is the word "strike."

The first recorded use of the word "strike" dates from

Labor's Special

the year 1200. From the context, a poem, it meant "to make one's way," as in "strike out for home." Over the next 500 years it accumulated other meanings: to strike a person a blow; to smite an object; etc. But it was not until 1707 that the word moved toward a labor usage. In that year, the London Gazette, in reporting a battle, said, "The enemy struck their tents and formed in line." That gave the word another level of meaning and took it a long step toward its contemporary connotation. The next step came a few years later when the official English chronicles, describing an event at Bath involving a masters' guild, stated: "This day the whole body of chairmen . . . struck their poles, and proceeded in a mutinous manner to Guildhall, respecting the granting of their licenses." Presumably the masters kept some sort of shop in tents and their resemblance to an encamped army was close enough to suggest the image to the writer.

From this it was only a short jump to the usage the word has in today's labor relations. The Annual Register of Britain reported in 1768 that "this day [May 9] the hatters struck and refused to work till their wages are raised."

Less than 50 years later the word, having been brought

Other examples of labor jargon and their meanings are:

Beef-squad—A gang of toughs, used either by a company to break up a picket line or by a union to enforce one.

Bug—Name for the union label on printing.

Company men or "loyal employees"—Workers whose interests seem to union members to tie in too closely with the company's. Also used to mean salaried employees.

Docking—Penalizing a worker for spoilage, tardiness, absence, etc.

Floater—A worker who continually leaves one locality to follow his trade in another place merely for the sake of variety.

Goon—A strong-arm thug. Originally, in Chaucer, meaning "to gun." Now applied to both union and company hired muscle. Made popular by Elzie Segar's comic strip, Popeye the Sailor.

Hit the bricks—To go out on strike, to walk out.

Hooker—A person who induces union members to act as spies for the company, then keeps them "hooked" by threatening to expose them.

Jimmie Higgins—A union member, usually with little prestige in the union, who will perform drudgery like addressing and sealing envelopes, checking name lists, etc. The name was used by the Socialist Party early in this century and Upton Sinclair used it as a novel title in 1919. It's unlikely that

the name comes from any real person.

Kickback, piece off, or tolling—Payment out of wages by a worker to a foreman or union official for employment, promotion, or job security.

Missionary worker—One who tries to break strikers' morale by calling at their homes, trying to convince wives of strikers that all is lost, starting rumors that the strike is over.



Noble—Captain of a strike-breaking squad.

Posting—Notifying employees of a vacancy in a high job classification for which eligible employees may bid. Notice is usually posted, hence, posting.

Rollback—A reduction of wages to a previous level.

Scamping—Bad work habits. Either deliberate failure to perform the job correctly; or, producing too much in the eyes of fellow workers, giving the impression the employee is just out for himself.

Scissor-bill, free-rider, or papoose—A nonunion worker. Rubber workers use the term "red apple," from apple-polisher.

Skippy strike—An organized protest by workers on an assembly line when they don't actually leave the plant but, by prearranged plan, assemble only a portion of the material passing through the line. In autos, say, every fourth car would arrive at the end of the line as an unassembled pile of parts.

Sweatshop—A place of employment characterized by poor work surroundings, long hours, low pay.

Wildcat, quickie, or outlaw strike—A walkout not approved by union officials.

Wobbly—A member of the Industrial Workers of the World, a union that left a legacy of earthy laborisms. An old IWW member gives this account of how the expression "wobbly" came about: "In Vancouver, in 1911, we had a number of Chinese members, and one restaurant keeper would trust any member for meals. He could not pronounce the letter w, but called it wobble, and would ask: 'You I. Wobble'

Language From Many Sources

along by immigrants from England, was heard in America. The Society of Cordwainers of New York—the shoemakers' union—ordered a "general strike" of its members.

• **Before the Law**—The lexicon of labor is of more than academic interest to employers. More than one NLRB decision has turned on the use of certain epithets—"scab" and "fink" are examples—under certain conditions. Such language might all be part of a strange and unsavory jargon to the industrialist, but the shades of meaning between such terms can be vital in a court of law in more kinds of cases than a simple libel suit. And they can be incendiary to workers.

American labor colloquialism is primarily of two origins. "Strike" is typical of a group of common English words, derived from the Saxon or Norman tongues, which have a special labor meaning. "Scab" is another such word. In Middle English it meant a "dirty, paltry fellow"—obviously, one prone to scabies. Significantly, the English unions did not adopt it as a synonym for strikebreaker. In Britain, such an individual is stigmatized as a "blackleg"—literally a disease in cattle and sheep that deposits a jelly-like substance in their legs: weak-kneed. The U.S. unions made their own word

"Wobbly" and when the card was shown credit was unlimited. Thereafter the laughing term among us was I. Wobbly Wobbly."



Pork-chopper—A union payroller, originally a union official who is in the labor movement, not because of any ideological belief, but for what he can get out of it for himself.

• **Trade Specialties**—In addition to the slang common to all union members, each occupation has its own vernacular. Much of it is enriched by the different ethnic streams that have provided the bulk of labor for different industries. Where Teutonic-origin labor prevails, as in brewing, slang for all hands is largely pure German; Jews in the needle

trades made its slang Yiddish; Mexicans in the metal mines have flavored that industry's speech. Scandinavians have made some of their words a common tongue in lumbering; Eastern Europeans have done the same in steel.

Thus, the brewery worker eagerly looks forward to beer-schiessen—beer time for the workers—and Kaiser's geburtstag—pay day. Bricklayers deride a barber, boot, or cobbler—a poor bricklayer—call for mud—mortar or cement—and complain if they get slime or soup—inferior mortar.

A carpenter brings his bread and butter—tool kit—to work, tries to keep them out of the hands of a bullstaller—a poor carpenter—and hopes he won't have to spend the day riding the air-working high up—wrestling toothpicks—12 in. x 12 in. beams.

Distillery workers smack their lips over angel teat—a mellowed whiskey of good bouquet—but disgustedly spit out bug juice—low-quality whiskey. Garment workers, who are all schneiders, are equally distrustful of automobiles—fast operators—and balmechules or kluppers—slow, inferior, inefficient workers. They wait for the pinochle season—slack season—when they can schmooze—idle around, talking shop.

Oilworkers use the terms cat plant—a plant where crude oil is split by catalysis; dead-in-a-hurry—a driver hauling nitroglycerin; Maud—an engine; and

for a vileness that, by their lights, was a cardinal sin.

• **Home Grown**—The other stream feeding U.S. labor jargon is endemic invention. The American frontier incubated vivid word-making in many fields and labor was not neglected. From this source came words like "fink" meaning a strike replacement, as contrasted to a "scab," who refused to go on strike; and phrases like "yellow dog contract," which has been echoed by the U.S. Supreme Court in precedent-making decisions. It means a pledge, now illegal, that employees, before being hired, had to sign binding themselves not to join a union.

When a worker gets paid for work he doesn't do, he's "featherbedding." Featherbedding clauses in labor agreements call for such things as the extra man in a diesel locomotive and standby musicians at a recorded program. This word goes back to the American frontier army in the 1850s. A soldier who had a soft touch was called a featherbed soldier. Hence, a job with little or no work is a featherbed job.

Another labor term having military lineage is "picketing." Sentinels posted to keep the enemy from infiltrating a military encampment were called pickets. Today, unionists parading around a business establishment, trying to keep people out, bear the same name.

tank-farm—a group of storage tanks. Steelworkers call a large ladle, a bug; an efficiency man, dickey boy; a wheelbarrow, an Irish local; and iron cooled in a ladle, a skull.

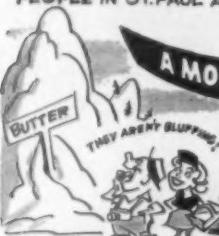


To coal miners, a banjo is a shovel; a boll-weevil, hill-billy, or snake-stomper, is a new miner; a dirty-neck is a miner; a hawbush is a local strike; and Jessie James is a company weigher. Metal miners, hard-rockers, call a pick an anchor; a white-collar employee a cackler; a smelter a hacienda; and an old-fashioned drill making lots of dust, a wiggle-tail or widow-maker. **END**

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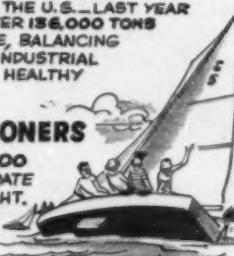


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Storm Warnings

NMU rejects U.S. coastal shippers' offer and striking Canadian seamen threaten to tie up Great Lakes shipping.

Shipping interests divided their attention between Atlantic and Gulf coasts and Canadian Great Lakes ports this week. Contract problems mounted in both areas as unions, in separate actions, pressed for substantial raises from cost-conscious ship operators.

On the coasts, the National Maritime Union rejected as "unrealistic" a 4% raise offer by 40 American steamship companies. It would have given seamen on 550 passenger and cargo vessels monthly increases up to \$15. NMU wants raises of from 6% in lower grades to 10% for highest paid crewmen in a wage reopening. If there's no negotiated settlement, the dispute will be arbitrated.

On the Lakes, the Canadian division of the Seafarers' International Union is demanding hourly pay (instead of the universally paid monthly wage) for its Great Lakes seamen. SIU says it wants them employed "on a basis comparable to workers in shore industries." The union struck two major shippers on May 10; others suspended operations. At midweek, 280 Canadian ships—mostly coal and ore carriers—and 5,000 crewmen were idle.

• **Union's Stand**—The stoppage hit Great Lakes shipping at the start of the heavy-volume season on the Lakes. Mediators assigned by a disturbed Ministry of Labor were busy trying to get ships moving again this week, but SIU's hourly pay demand—which operators said was totally unacceptable—was a barrier. At midweek, a settlement appeared far off.

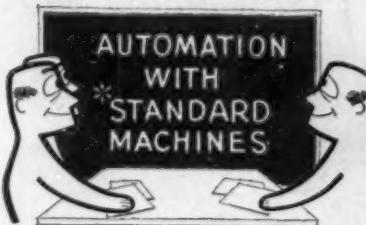
The hourly wage demand has been kicked around for years in Dominion lake ports, but it has never been pressed so seriously before. Up to now, it has been more of a bargaining gimmick than a strike issue.

This year, SIU insists that it won't bargain away the demand for hourly pay. Union negotiators contend that a deckhand's \$194 a month for a varying number of days and of weekends is an unfair basis of pay; besides, SIU says, it figures out to less than \$50 a week or \$1.25 an hour. The union wants a \$1.55-an-hour basis rate.

• **"No Comparison"**—Shippers contend that shore and lake jobs aren't comparable. The deckhand making his approximate \$50 a week also gets his berth and three square meals a day. He's paid a subsistence allowance while ships are fitting out between trips, even



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though he isn't working. Moreover, shippers argue, the seamen are better off because they have fewer incidental costs of employment—work clothes, transportation to and from jobs, and the like.

Whatever the arguments, they come down to this: SIU wants more money for seamen and sees a shift to an hourly wage as the way to get a big boost; shippers are willing to talk about a monthly pay hike for seamen but not an hourly wage basis that could raise average hourly pay as much as 50%—or in amounts ranging from \$78.15 a month for deckhands to \$268.15 for highest-paid crewmen.

AFL-CIO Group Deals Bodyblow to UE

The International Union of Electrical Workers (AFL-CIO) this week appeared near a substantial victory over the leftist United Electrical Workers. UE's important District 4 covering nearly 20,000 unionists in the New York City-Newark metropolitan area took steps to switch to IUE—and return to the main stream of American labor.

• **Fight Over**—James McLeish, president of the once-powerful UE district, recommended that it abandon its fight against IUE and join "the majority union in the electrical, radio and machine industry . . . to achieve unity." UE's controversial James Matles bitterly opposed the recommendation in a tense and dramatic district council meeting in Newark. Despite his personal efforts, the council O.K.'d the shift. Matles then fired McLeish and his staff.

It was a case of locking the stable door after the horse was spirited away. McLeish went on IUE's payroll as an organizer, a little sadly, he said, because it's "hard for a man to give up something close to his heart for 20 years." His first IUE assignment is to corral District 4 UE locals for the AFL-CIO unions.

All 13 locals, claiming to represent more than 18,000 workers in 173 shops, are expected to approve the shift to IUE. The AFL-CIO union's rival District 4, with 68 locals claiming 80,000 members, will accept the UE secessionists as individual locals "on the same terms and conditions" as present IUE locals. However, IUE warned that no Communists will be able to hold union offices.

• **Contract Question**—Although UE may not be able to hold onto any of the seceding locals, it plans a "contract by contract" fight to hold 173 employers to their labor agreements with UE. According to Matles, such a struggle may postpone any final decision for at least a year.

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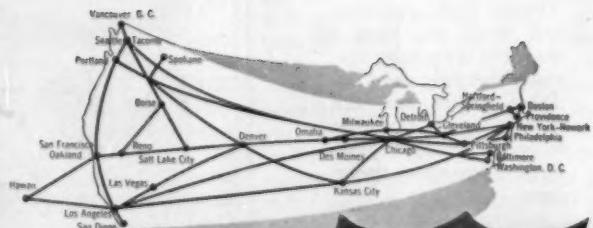


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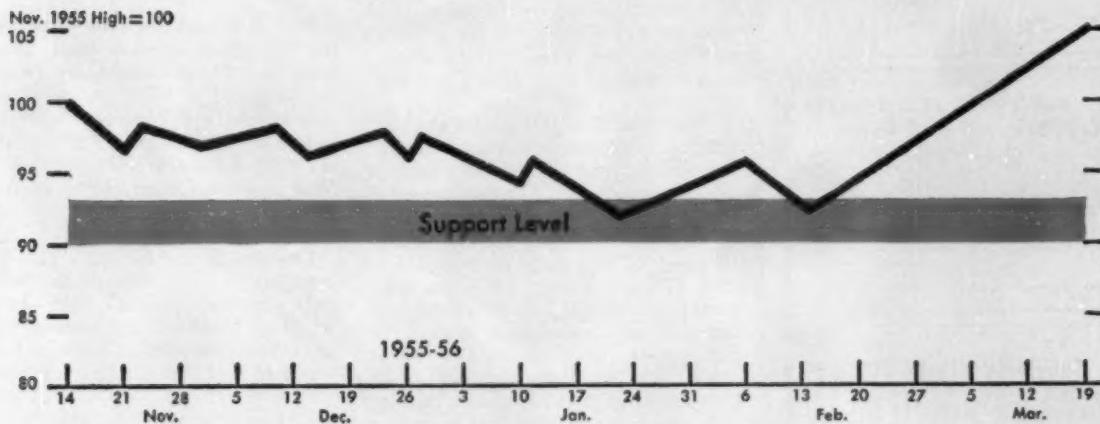


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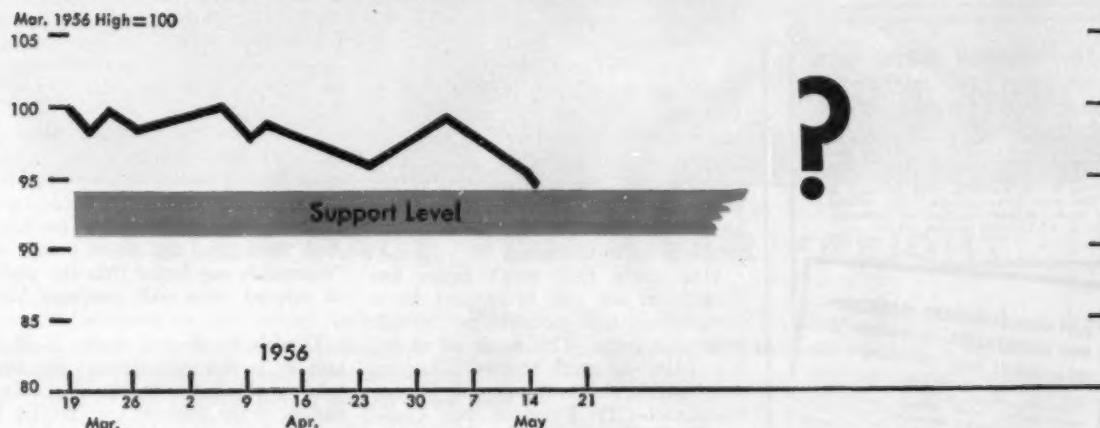


THE MARKETS

THE STOCK MARKET dropped around 8% from its high of last November to the lows of January. Then it hit a so-called "support level" and boomed to a new high in March...



... Since March the market has moved much as it did last winter. Now it is nearing a new "support level".



Data: Standard & Poor's Corp.

Can the Market Jump Back Again?

The stock market kept slipping lower at midweek, but some Wall Streeters were using a familiar sedative to soothe their shattered nerves. "The market," they said, "will not go through the support level of 480 to 490 on Standard & Poor's 50 industrial index."

Their faith in the 480-490 support level is not ill-founded. But the same bull market enthusiasts could still be disappointed. The current support level (bottom chart) was built up through the long cold weeks of last November,

December, and early January, when the index moved gradually lower in a range of 475-490. The index jumped into new high ground in March, moving as high as 521.

• How Some See It—By midweek, it had suffered its longest decline—eight days—since the fall of 1954, had lost over 25 points, and was down about 5.5% from its high. It stood at about the upper limit of the November-to-January trading range. So the enthusiasts reasoned that if there were suffi-

cient bargains at the turn of the year to boost the average to a new high, those same bargains must exist now and renewed buying will drive the average into a new upturn.

The support-level boosters might be heartened by the most recent test of a support level (top chart). This came in January, and provided the springboard for the March highs. The support level in January was in the 445-460 range—the trading area within which stocks had languished through October, 1955,

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following the "heart attack" sell-off. From the October low, the index boomed to its November high, then went into the sidewise movement that has provided today's support level. By January, the blue chip equities sank back to their October trading range. Many institutions and individual investors who had held off buying in the fall and had then seen the averages score new highs, wouldn't pass up a second chance at such prices. Their buying sent the average to its March bull market peaks.

• **The Other Side**—Of course, the market could conceivably fall right through the latest support level without so much as an upward hitch. It has happened that way before—in 1953, for instance. Through most of 1952, S&P's 50 industrials moved in a range of from 245 to 260. Then, in January, 1953, the index went nearly to 270, only to reverse gears and shift into a prolonged slump. But the support level of 245-260 didn't prove very substantial. Stock prices dropped through it like a rock through wet tissue paper, and finally started turning upward again from a point some 20 notches below the lowest limits of "support."

The same thing happened in 1946, when the index flopped through the support level, and began a short-lived recovery only when it was some 15 points lower.

• **"Support" Theory**—Perhaps the most important thing about support levels is that they are of necessity usually fixed in arbitrary bounds. The mere fact that support is not provided within that range doesn't mean disaster. On the other hand, the existence of such a level doesn't necessarily mean that support will be forthcoming.

One group that won't figure too strongly in any role of support for a new upturn will probably be the all-important autos. This week, all of the Big Three—General Motors, Chrysler, and Ford—as well as the two big finance companies—CIT Financial and Commercial Credit—sold at new 1956 lows. GM Pres. Harlow Curtice's revised production estimate of 5.8-million cars instead of 6.5-million this year put further downward pressure on the automotive group.

A major factor in the recent downturn, which saw the 50 industrials sink below 500 for the first time since Mar. 13, has been the stand-offish attitude of institutional buyers. "They haven't been big sellers, but on the other hand they haven't been doing much buying, either," said one analyst this week. Another added, "They're sitting by, waiting for the bargains, but if the average starts dropping fast, they're liable to figure that the longer they wait, the bigger the bargains will be."

Wall St. Talks . . .

... about boosted bank rates . . . "puts and calls" . . . a confident bank . . . cold water on hot oil rumors.

The U. S. isn't the only place where the rediscount rate has been boosted lately to prevent inflationary excesses. In Canada the bank (or rediscount) rate is now 3% compared with 1½% in mid-1955; in England 5½% vs. 4½%; in West Germany 4½% vs. 3%; in New Zealand 7% vs. 1½%, in April, 1954.

Dealings in "puts" and "calls" are zooming, say Streeters who handle such "option contracts" (BW-Jun.18 '55,p41). Much of the volume represents "plain speculation," but increased uncertainty about the market among both bull and bear has also played a large part. Many bulls with big paper profits, are reportedly hedging against any future market drops that could seriously hit such gains by buying puts (contracts giving them the right to sell at around current levels during a stated period). Calls (options to buy stock at around present prices during a stipulated period) are also said to be increasingly used as hedges by bears who have gone "short" on stock.

Chicago's First National Bank expects no sharp drop in money rates for some time, Streeters observe. The bank will raise its interest rate on savings accounts from 1½% to 2% on July 1. And that step, the bank points out, "represents our belief that the plateau of interest rates will continue high."

Denials in the oil trade: Gulf Oil says it is not considering any stock-split "at this time" despite all the Street rumors to the contrary . . . Sinclair Oil is not considering the purchase of Southern Production and/or Texas Pacific Coal & Oil. "No offers of any kind," it says, "have been made" for any properties with which the Sinclair name is "now being linked by rumors."

Market letter gleanings: "Lower prices appear likely; should untoward news . . . make its appearance, the decline could assume substantial proportions." (Arthur Wiesenberger & Co.) . . . "We think it is time to reverse our recent bearish attitude. . . ." (Filor, Bullard & Smyth) . . . "Would increase cash reserves and . . . scrutinize securities held, not solely on the basis of . . . individual merit but also on the basis of the amounts of each owned. (E. E. Hutton & Co.)



GM Power Opens New Horizons

and Welcomes the Challenge of the Future
at the new General Motors Technical Center

FASTER PACE FOR RIVER FREIGHT

Booming business on the inland waterways is river freight—increasing by leaps and bounds, year by year. It's handled in the main by Diesel-powered towboats that push strings of heavily-laden barges up and down river.

And soon these towboats will handle even heavier tows, make faster trips at less cost. For many of them will be powered by General Motors Turbocharged Diesels that give these hard-working, money-making boats far more power than ever before.

Turbocharging—the greatest GM Diesel development in

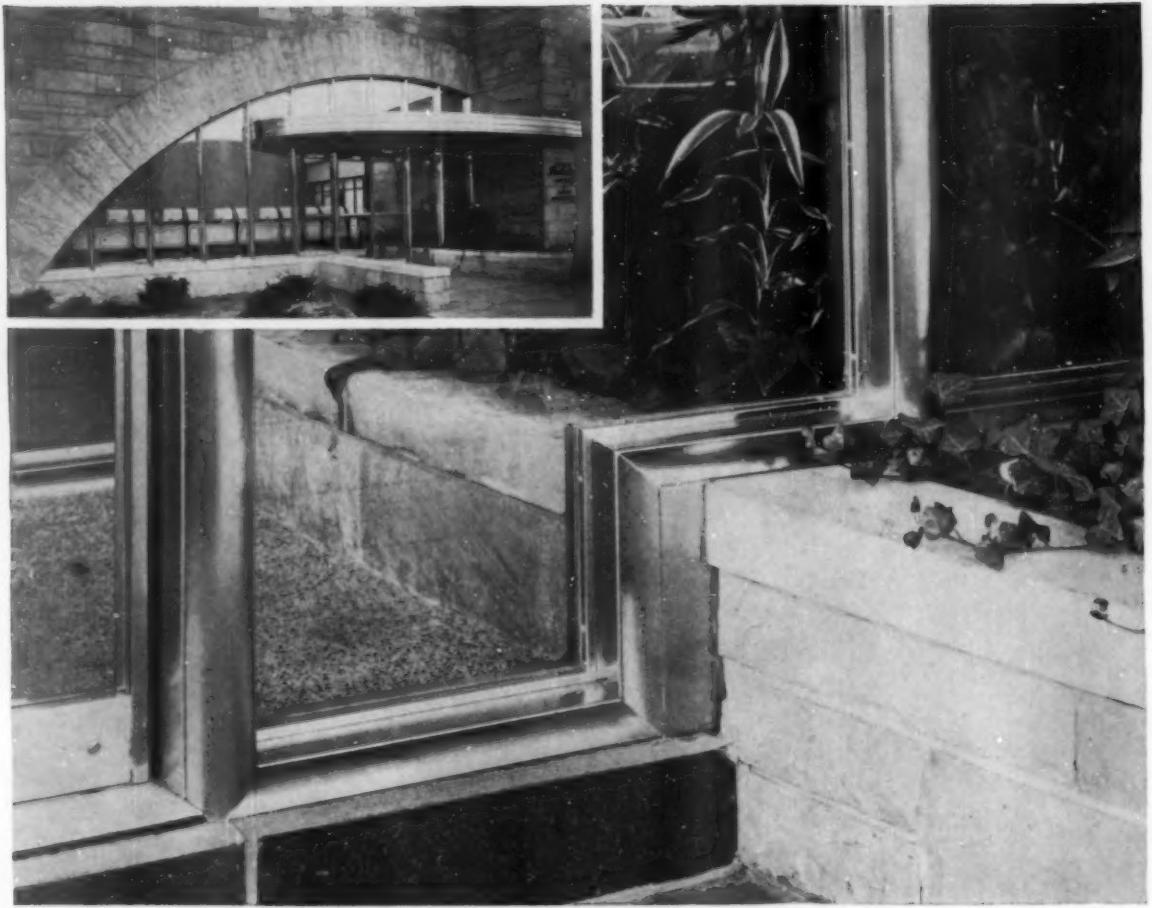
17 years—gives a GM Diesel 75% more power with virtually no increase in engine size and a big reduction in weight per horsepower. And horsepower for horsepower, a GM Turbocharged Diesel costs less to operate, install and maintain.

Whatever your power needs—for tugs, tankers, towboats, dredges, cargo ships or *any other application*—specifying a GM Turbocharged Diesel can give you a far greater return on your investment. A letter will bring you full details on the GM Turbocharged Diesel. Why not write it today?

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2 "Stainless Steels for Store Fronts and Building Entrances"—40 pages of valuable data on examples and details. AIA File No. 26D.

3 "Stainless Steel Curtain Walls"—A 24-page progress report on methods. AIA File No. 13-H-1.

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Here's an intriguing entrance design for a recently-built midwestern structure. Stone and stainless steel and glass . . . a planter that continues inside . . . two sweeping curves in opposed planes.

If there's any other material that can match the ageless, everlasting qualities of stone, it's *stainless steel*. Use it for its hardy, perennial beauty, that neither smoke, fumes nor weather can impair. Use it for its remarkable strength, greatest of all the structural metals. But above all,

use stainless steel because it wears so well and lasts so long that it's actually the most economical metal you can use . . . the least expensive in the long run.

Keep it in mind, too, that A-L Stainless Steel is versatile—you can employ it in your structures in everything from building hardware to an entire curtain wall design. • If we can help you with any data or engineering assistance, call on us. *Allegheny Ludlum Steel Corporation, Oliver Building, Pittsburgh 22, Pa.*

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WSW 6058



PERSONAL BUSINESS

BUSINESS WEEK
MAY 19, 1956



Migration to the suburbs and the country has thrown a lot of people into a strange environment. One of the biggest questions of all hits them hardest at this time of year: Are they doing the right thing with that plot of land that is part of their new home?

Keeping a yard in shape, of course, requires a certain amount of special equipment. For the average plot of land, however, the investment can be low. As little as \$250 spent on tools (including some power tools) will give you all you need to take adequate care of one acre, for example. And with the right equipment, one man can handle that acre himself on weekends.

The key to most suburban yard work has become the power lawn mower; it's regarded as almost as essential as the refrigerator. They sell from as little as \$40 to well over \$100. Two major factors in price are: (1) The wider the cut the higher the price (21 in. is the widest); and (2) a self-propelled mower costs more than one that drives just the blades and not the wheels.

About 80% of the power mowers sold this year will be the rotary type, rather than the familiar reel type. A good rotary mower will generally cut high or tough grass and weeds more easily than a reel mower. (Unless you have a lot of outside electrical outlets, you'll find a gasoline-driven mower of either type more practical than an electric mower.)

If you have a hedge around all or part of your acre, an electric hedge-clipper is another good power-tool investment. Cutting a hedge by hand is a tiring chore and takes some skill.

These might be considered the minimum power-tool requirements for one acre of land. There are many others, of course, on the market. But remember that no matter how mechanized you are, some jobs can still be done best by the lowly hand tools. Here's a fast rundown of major ones:

Big tools should include wheelbarrow or garden cart, roller for your lawn (you can get a light one that you fill with water for weight), a spreader for lawn seed and fertilizer, and a portable sprayer or duster.

On small tools: A spading fork is best for turning over soil before planting gardens. But it won't do so good a job as will a long-handled shovel or spade when it comes to digging holes for such things as shrub-planting. An iron-tooth rake is good for smoothing out freshly dug soil; but use a Japanese rake (bamboo) for your lawn.

You'll probably find lots of uses for a hoe, and for a trowel (planting in crowded flower beds). And don't forget hose and lawn sprinklers. Hose length depends on the size of your plot.

The cost of equipment for maintaining five acres properly would run two to four times that for a one-acre plot. Main reason: You'd need a garden tractor with attachments such as plow, harrow, cultivator, sickle bar. A two-wheeled tractor with these attachments costs around \$500; a riding tractor and attachments runs around \$1,200.

Also, if your five acres had a lot of lawn or a large cultivated area, it would be best to have a built-in sprinkler system. Finally, even with the right equipment, you'll need considerable extra help to maintain five acres in any condition short of wilderness.

PERSONAL BUSINESS (Continued)

BUSINESS WEEK
MAY 19, 1956

Are your aches and pains beginning to make you wonder if that vegetable garden you're planting is worthwhile? According to the University of Tennessee Extension Service, it is. A half-acre farm garden will produce enough vegetables for a family of five, assuming the soil is fertile and well prepared. If bought in the open market, these vegetables would cost about \$325.

Having a garden doesn't take so much time as some people think. The Tennessee researchers say that a half-acre plot takes a total of 12 days of hand labor to work. Using a garden tractor cuts that time in half.

Be sure to keep plenty of a good pesticide and weed-killer on hand— insects and weeds are your major enemies. You can apply both either wet or dry. With insecticides, the dry method is generally faster and more effective. Likewise, dry weed-killer applied by a spreader is the most effective (and cheapest) method of weeding a lawn.

Almost everyone has the feeling that no matter when he takes his vacation, it's bound to rain. If it does, you can now get a consolation prize: This year vacation rain insurance is available in the U. S. for the first time.

Fireman's Fund Insurance Group has such insurance covering 100 popular resort areas throughout the nation. If your vacation is spoiled by excessive rain, it will pay back part or all of your investment.

The new coverage is sold in amounts of \$100, \$200, and \$300 per week for 14, 21, or 28 days. Premiums are a flat 5% of the total coverage bought, range from a minimum of \$10 to a maximum of \$60.

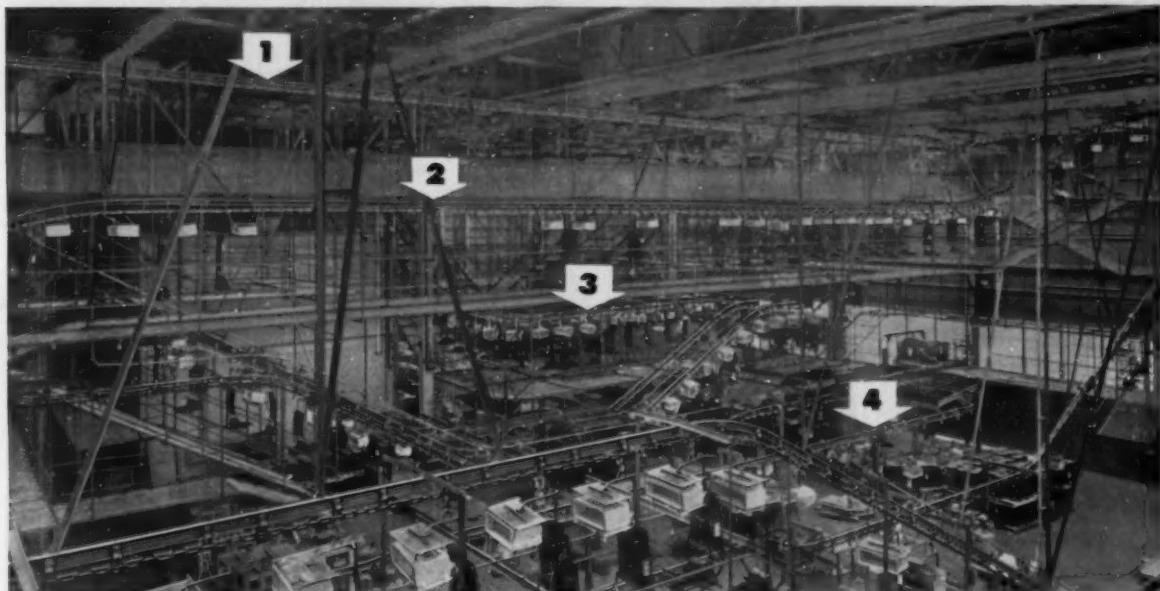
You collect only if there is "excessive rainfall" during your vacation. This is determined first, by records of the U. S. Weather Bureau nearest the area covered by the policy. Second factor is the number of days during your vacation on which there was "excessive rainfall."

You can't collect during a two-week vacation period, for example, unless excessive rainfall is recorded for at least five days. Then you could collect 10% of your total insurance. For six days of rain, you would get 25%; eight days, 60%, and 10 days, 100%. The scale varies proportionately for three- and four-week vacations.

Latest poison-ivy treatment on the market is Ziradryl Lotion. It contains zirconium oxide, benadryl hydrochloride, and camphor. Tests show it brings relief from itching and inflammation within 24 hours.

One little-known CARE operation is what the organization calls "An American Bookshelf." This consists of 99 American books, in paperback editions, which U. S. Information Agency selects and CARE assembles for shipment to schools and libraries overseas. A \$30 check to CARE will buy one complete bookshelf. At retail, the collections cost about \$50.

Manners and modes: Only one out of every 10 Americans practice tithing—giving 10% of their income to churches and charity—according to tax returns. . . . Luxury auto seat covers are spreading to the lower price lines of cars. Women are responsible. . . . A recent test indicates that it takes much less alcohol than believed to impair driving ability. . . . Two doctors claim that "one hour of natural sleep is more beneficial than eight hours of sleep that has been artificially induced"—that is, by sleeping potions.



G-E's Appliance Park, Louisville, Ky. Link-Belt overhead conveyors in Building 4 are located at four elevations (arrows).



On-the-move inspection is accomplished as Link-Belt trolley conveyor carries cases through special inspection stations.



Link-Belt also designed trolleys with special welded arms to carry current collectors for five electrified conveyor units.



After finishing touches, units will go direct to cabinet assembly line. Plants have no dead storage except raw materials.

G. E. makes refrigerators in transit

... assembles, tests, stores them on Link-Belt overhead trolley conveyors at Appliance Park, Louisville

SEEKING a practical means of mechanizing refrigerator production, General Electric installed 15½ miles of Link-Belt overhead trolley conveyors in Appliance Park Buildings 4 and 5. Through parts delivery, assembly and testing . . . during enameling and cabinet fabrication—these conveyors coordinate operations, provide moving storage, permit push-button control over the entire system. Another outstanding aspect of this installation was the speed with which Link-Belt engineers handled complete erection, drawing many superstructure plans *on the spot* as work progressed!

The answer to more efficient handling in your plant may be found in the flexibility of these conveyors—their ability to travel between floors or buildings, rise or drop sharply—plus Link-Belt's experience in applying them. Call your Link-Belt office, or write for Book 2330. LINK-BELT COMPANY, Dept. AV, Prudential Plaza, Chicago 1, Illinois.

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In Regions

Pennsylvania Moves to Woo Industry, Halt Flight From Tax Uncertainties

PHILADELPHIA—The Pennsylvania Industrial Development Authority was created this week. Its birth coincided with piecemeal evidence that potential industry has been driven elsewhere by uncertainty over the state's tax picture.

For months, the Democratic Governor, George M. Leader, and the Democratic House were lined up against the Republican Senate over how to raise money. Leader opposed a sales tax, suggested income taxes. The Republicans opposed income taxes.

Finally, in March, the legislature adopted a 3% sales tax, in place of a 1% sales tax that Leader had allowed to expire last August (BW-Mar.10'56,p34).

During the deadlock, while Pennsylvania was losing potential tax receipts, industries in quest of plant sites apparently decided to pick nearby states where taxes were more foreseeable.

Only last week, Ford Motor Co. decided to go across the Delaware River, to Pensaiken, N. Y., to build a plant that had been destined for North Philadelphia.

And in the year ended Apr. 1, industry generally had moved to invest \$534-million along the Pennsylvania RR lines in Ohio, only \$9.6-million in Pennsylvania.

The industrial authority bill that Leader signed into law this week, provides a \$5-million revolving fund for the period ending next May out of appropriations.

The authority will make a second mortgage loan for up to 30% of the cost of a new project. The money will go to community industrial development groups that, in turn, may use it to help establish new industry. The local groups would provide 20% and banks or other lenders would take a first mortgage for the other 50%.

California Survey Urges State Drop Textbook Printing Monopoly

SACRAMENTO—A move is gaining momentum in California to get the state out of the textbook printing business.

California is unique in the control it holds over the selection, publication, and distribution of books to its elementary public schools. (High school texts are bought on the open market by school boards.)

One title is chosen for each subject, in each grade, and it is the official text until the state switches to another. The state rents the books' plates from publishers by competitive bid on a royalty basis, runs off the books in its Sacramento plant.

The custom goes back to 1884 when California had trouble getting books delivered from the East.

But it has the disadvantage of limiting titles available: Eight of the largest publishers refuse to bid.

A legislative committee recently looked into the situ-

ation. Most school districts said they buy books elsewhere as well, despite the never enforced threat of misdemeanor fines.

The non-bidding publishers observed that the system could, eventually, put them out of business. Also, if they bid low to get California business, they said, they could be accused of discrimination by other states.

Its testimony in, the committee said it would sponsor a constitutional amendment in the next legislative session to authorize school boards to pick and buy books.

Power Squabblers Call a Truce

To Make Sure Plant Is Built

SEATTLE—Pacific Power & Light Co. of Portland and Cowlitz County (Wash.) Public Utility District, competing for power sources on the Lewis River near Portland, interrupted their skirmishing long enough last week to agree that work on a new site shouldn't be delayed.

Cowlitz has been negotiating to buy PP&L's two projects on the Lewis, which generate 198,000 kw., and has filed condemnation suit against them.

Cowlitz also would like to develop 265,000 kw. on the Swift tributary, for which PP&L seeks a license. Cowlitz has protested the license to the Federal Power Commission.

Last week, the two agreed that PP&L should start preliminary work on the Swift so that no time will be lost. If Cowlitz gets the license, it will reimburse PP&L.

City Fathers Split on What to Tax

Ex-Carpet Plant That Came to Life

AMSTERDAM, N. Y.—L. Grossman Sons Inc., which bought the old Bigelow-Sanford Carpet Co. plant, has landed new tenants for the buildings (BW-Jan.14'56, p90). But the city fathers can't agree on how much to tax Grossman for the property.

The city council voted last month to reduce the assessment, from \$2.2-million to \$405,000, as an inducement to new industry. But Mayor Frank J. Martuscello vetoed the reduction, saying it was unconstitutional.

Last week, the council split, 4 to 4, on a vote to override the mayor.

Gang-Up of Public and Private Groups

To Break Ground in Slum Drive

CLEVELAND—Ground will be broken May 31 for Garden Valley, a five-year, \$60-million urban redevelopment project sponsored by a unique coalition of industry, finance, local and federal authorities.

The development will reclaim 247 deteriorated acres of Cleveland's south side, providing low-cost public and private housing as well as churches, a shopping center, park, and schools.

"SKYLINE" ADVERTISING



Above: 75,000-gal. special elevated tank built for Gerber Products, Inc., at Rochester, N.Y.

Right: 100,000-gal. Horton Watersphere® built for Rubatex Division of Great American Industries, Inc., at Bedford, Virginia.

...a PLUS value with

HORTON ELEVATED TANKS

Dependable gravity pressure water storage is the primary function of a Horton® elevated tank. It provides a private water supply that is available day or night for fire protection and other needs. But here is a PLUS value—the use of these attractive tanks to promote your company name or a replica of your product. Towering above the surrounding area, this valuable "skyline" advertising is a constant reminder of your modern, progressive plant and its products.

Chicago Bridge & Iron Company has complete facilities to create elevated tanks of standard or unique design . . . structures that are functional as well as decorative to meet your requirements. Complete information on Horton elevated tanks that advertise may be obtained by writing our nearest office.

Tanks and steel plate work for Municipalities . . . Aircraft, Chemical Process, Petroleum and Pulp and Paper Industries . . . and Industry at large.



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Los Angeles • New York • Philadelphia • Pittsburgh • Salt Lake City
San Francisco • Seattle • Tulsa

Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

The unusual group is led by the Cleveland Development Foundation, a nonprofit association of industries that have pooled money and men. About 100 companies pledged or subscribed \$2-million, lent men for administration.

Upshur Evans left his post as assistant to the president of Standard Oil Co. of Ohio to become executive director.

The foundation provided land for the housing development, advanced funds for planning and engineering, and helped in negotiations with the federal government and lending institutions.

Incorporated in 1954, the foundation is the result of an earlier civic improvement group that studied how Cleveland could be made more attractive to industry. One conclusion was that more and better housing, especially for Negroes, was the most pressing need.

Since its conception, the foundation has:

- Bought and assembled the land for \$345,000, sold it to the city for \$314,000.

- Advanced the city \$251,000 for site planning, installation of underground utilities and design of new apartment buildings.

- Put up 7% of equity—over \$150,000—for Garden Valley housing construction.

- Spent \$100,000 for administrative expenses.

- Persuaded industry in the area to clean up land and to eliminate smoke.

- Said it would help rebuild other Cleveland areas.

• • •

Regions Briefs

Toledo cigar stores and lunch counters can't provide pinball machines. The City Council voted to outlaw the machines as of June 30, despite the loss of \$200,000 annually in licenses.

Air conditioning will go underground July 1 when the New York Transit Authority starts experimental operation of a 10-car cooled train. Earlier tests were inconclusive; if this one succeeds, air conditioning of the whole vast system would still be unlikely before 1958 at the earliest.



Can use of plastic components correct a corrosion problem in your product?

More and more business men are discovering there is a positive "yes" to this question. Annual savings can be quite remarkable.

The outstanding corrosion resistance of styrene plastic is well demonstrated by a battery hold-down unit recently introduced and patented by the Automotive Division of Van Brode Milling Co., Inc., Clinton, Mass.

Their "Kant-Ker-Rode"® Battery Hold Down is giving top performance under severe service conditions. Terminal covers, bolt wing nuts and washers—molded of high-impact styrene—are impervious to acid and corrosion, and have excellent electrical properties.

The unique characteristics of Monsanto's Lustrex® styrene are being put to work on new jobs every day. Lustrex compounds offer high dimensional stability and

chemical resistance. Special formulations are available that provide greater impact resistance or tolerance to heat.

Lustrex is tasteless, odorless, nontoxic. Its moldability simplifies assembly problems. Color range is almost endless—in crystal, pastels and deeptones which are transparent, translucent or opaque.

Plastics have been called the raw materials of progress. Perhaps they can save money for you. To get information about qualified custom molders who can serve you in the application of plastics to your design problems, write Monsanto Chemical Company, Plastics Division, Room 265, Springfield 2, Massachusetts.

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MONSANTO

REG. T.M. OF VAN BRODE MILLING CO., INC.

Where creative chemistry works wonders for you



lemme tell you about the time I addressed the Board . . .

I guess everybody dreams about telling off the Board. Like that guy Walter Mitty in the movies. This wasn't exactly a dream, though—more like a nightmare.

Anyway, I'm trying to figure out my monthly maintenance report when J. B.'s secretary rang up. Who's J. B.? Just Chairman of the Board, that's all. And he wanted to see me in the Board Room. Right away.

I rush in. It's the annual meeting of directors, and there were fifteen of the perspirinest captains of industry you ever saw. They eye me like I'm a typhoid carrier.

"As our sterling maintenance man," began J. B., "perhaps you'll be good enough to explain exactly what's wrong with the air conditioning."

"The air conditioning system is O. K." I answered. "It's the main power feeders . . . and they'll be out for

the rest of the day." You shoulda heard the chorus of groans.

This being my first and last chance to address the Board, I figured I'd make the most of it. "And furthermore," I kept on, "the elevators are stalled, the business machines aren't running, and because nothin' is comin' through from Section III, the super just sent the men in the plant home."

J. B. glared at me, but I wasn't through. "Might I suggest, gentlemen, that you put some good, repeat good, power cable on the agenda for future replacements? It's the best way to prevent things like this."

Sure, J. B. bawled me out for shooting off my mouth in such gilt-edged company. But I noticed he wrote "Expedite, J. B." on my purchase requisition for Okonite power cables.



where there's electrical power

...there's **OKONITE CABLE**

THE MANAGEMENT PATTERN



Crawford H. Greenewalt
E. I. du Pont de Nemours & Co.



Ralph J. Cordiner
General Electric Co.



Harlow H. Curtice
General Motors Corp.

Big Business Talks Back to Its Critics

BY WHAT OBVIOUSLY was mere coincidence, Big Business in the past couple of weeks has stepped forward in sprightly challenge to its critics.

Its spokesmen were the chief executives of three of the country's largest corporations (pictures).

On Apr. 26, Crawford H. Greenewalt, du Pont president, addressed the American Newspaper Publishers Assn.'s Bureau of Advertising. In a speech remarkable for its refreshing tone, he said:

"Modern society . . . simply cannot exist without many large units. . . . I view this with satisfaction, not with alarm, for the pressures of society will inevitably produce their own controls and stabilizers."

On Apr. 30, General Motors replied succinctly to Sen. Joseph O'Mahoney's subcommittee report that saw a trend toward monopoly in that company (BW—Apr. 28'56, p34). The statement quoted from lengthy testimony by Pres. Harlow H. Curtice, who had tried to explain how GM got so big. It deplored the fact that the subcommittee overlooked what it considered the prime reason:

"The most important single element for our success has been management—our organizational approach and attitude of mind."

On May 7, Ralph J. Cordiner, General Electric president, completed a series of three lectures sponsored by the McKinsey Foundation for Management Research and Columbia University School of Business (BW—May 12'56, p68). These lectures were the first in an annual series on big enterprises.

IN EACH CASE, you can find something noteworthy about these expressions of Big Business.

For instance, the excerpts from Curtice's testimony and Cordiner's second McKinsey lecture raised a point that has bothered many a theoretical economist: If monopoly power is not the answer to why big companies get big and can get even bigger, what is?

The answers from GM and GE were much the same, and pointed up something that business, in stepping forward, too often ignores. The fact is that some managements have learned to organize

their companies in such a way that the traditional inefficiencies of bigness are avoided—the advantages of bigness through technological, capital, and manpower resources are not lost in a bureaucratic jungle.

On this ability there is no monopoly. As Curtice told the Senate group: "Its two elements—organizational structure and attitude of mind—can be developed by any business. As a matter of fact, many businesses have done so successfully."

There was something else that flavored these airings of the Big Business mind.

Neither Cordiner nor Greenewalt refused to face the fact that bigness—here to stay and grow—does raise some deep problems. Greenewalt felt:

"The great problem, the great question, is to develop within the framework of the group the creative genius of the individual."

Cordiner raised this question:

"What are the ultimate implications of efficiency?

"There are critics who feel . . . that it is the duty of the government to . . . somehow limit or tax or frighten the successful company into being less successful. What is the duty of the professional manager in such cases? Surely he should not hold back . . . out of fear."

ALTOGETHER, the way the subject of bigness was handled by this trio may have set some sort of precedents.

In the first place, they suggest a fresher approach on the part of the business spokesman. Second, the statements were minus what so often seems to amount to apologies for bigness.

Instead, all three took it for granted that bigness is a vigorous fact of life that the U.S. has long accepted as part of modern economics. From that point, they made a reasonable, unemotional attempt to explain how it is that Big Business has grown—and without ignoring some real problems.

Put on this plane, the discussion of Big Business can become a rewarding one—and not a hassle among partisan interests.

How we work steel to make steel work for you



"WHRRR'IIING!"

Unique A. O. Smith process offers industry four benefits

Perhaps you can capitalize on A. O. Smith's experience in mass production of military aircraft propeller blades.

For this critical job, we developed a unique manufacturing method. To make each hollow steel blade, *seventeen pieces of steel were precision-forged and contour rolled . . . then automatically welded together.* Result: a 4-way pay-off — (1) LIGHTER, (2) STRONGER blades . . . produced in (3) LESS TIME and at (4) LOWER COST.

The techniques employed here may

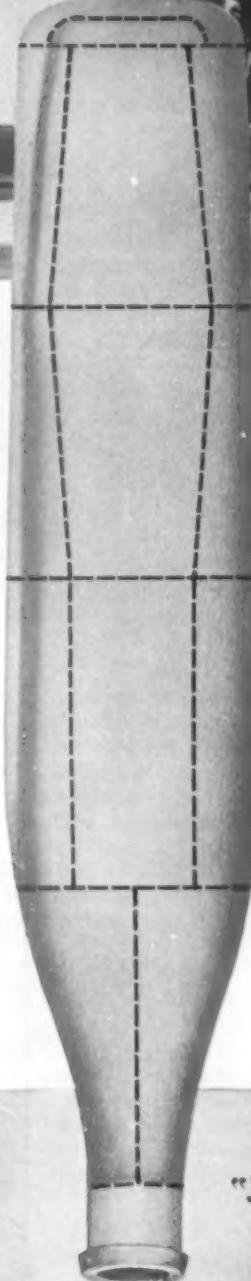
provide the answer to your production problems. It's possible, too, that you can make good use of other A. O. Smith successes in the field of aviation. Our experience includes volume production of aircraft landing gear, structural airframe components and other products in a variety of metals.

Write for comprehensive brochure that describes the special skills of A. O. Smith's Aeronautical Division . . . also tells of the many other ways *we work steel to make steel work for you.*



"Jigsaw" puzzle . . . perfectly solved

Dotted lines on hollow steel propeller blade show where welding joined the seventeen precision-forged, contour-rolled steel pieces.



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11 plants in New York, New Jersey, Pennsylvania, Ohio,

Wisconsin, Illinois, Texas and California.

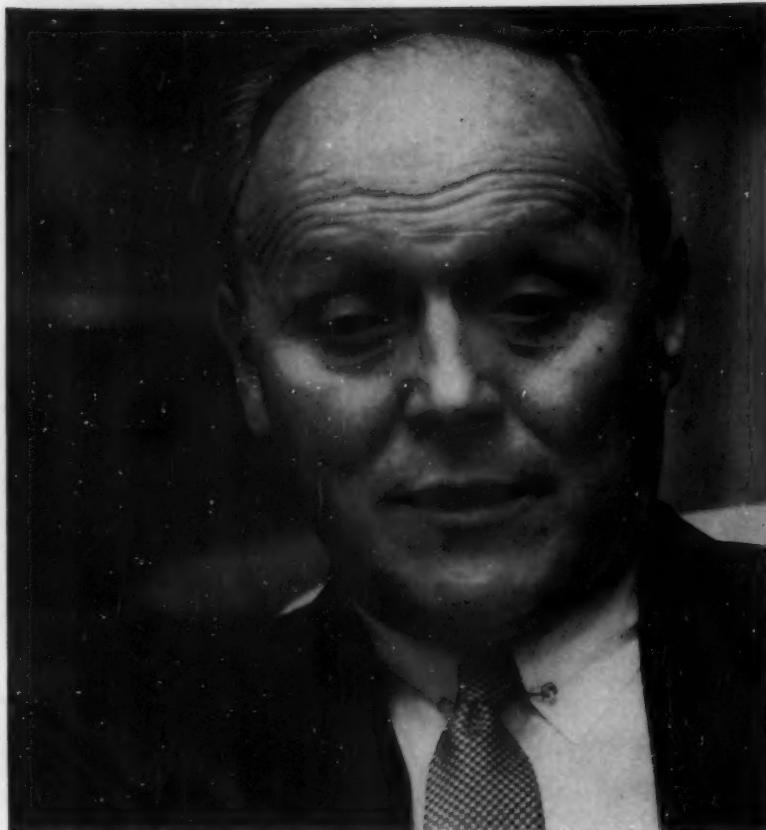
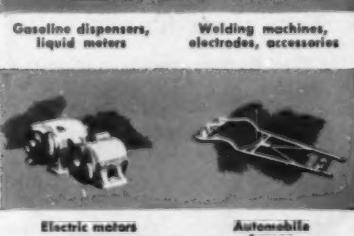
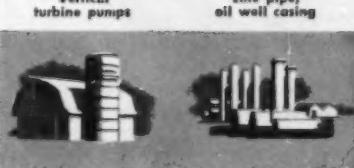
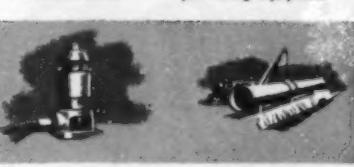
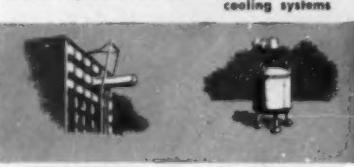
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CHARLES ALLEN, JR., director of ACF-Wrigley Stores, did the planning . . .

Behind ACF's Big Switch

It's fairly common for companies confronted by financial roadblocks to detour into related products. But it's another story when a bus manufacturer decides to avert trouble by swerving into the food business.

Two years ago, ACF-Brill Motors Co. was producing buses and aircraft parts. Its 1953 net sales were \$29-million. The company had been making vehicles of one kind or another for years; its ancestor opened shop in 1869 as a horsecar builder.

But business was heading downhill. Only profitable government contracts stayed a headlong plunge. Operating income dropped to \$1.5-million in 1953 from \$2.3-million in 1952, and from \$2.8-million in 1951.

Today, as ACF-Wrigley Stores, Inc., the company is firmly established as one of the nation's top 10 retail food chains, with 1956 sales expected to top \$320-million, and net income of better than \$5-million.

In the next few weeks the company will take over Fred P. Rapp, Inc., a family-owned, 10-store chain of supermarkets in St. Louis. The deal brings

the ACF-Wrigley supermarket roster to about 150. The company plans to build 40 new stores and acquire other independent supermarket chains that will help lift annual sales to better than \$400-million by the end of 1957.

* Far Cry—All this is a far cry from ACF-Brill's position just a year ago. Then it had sold its plants and was little more than a corporate shell containing less than \$7-million in cash and a listing on the New York Stock Exchange.

The decision to go from heavy manufacturing into food retailing raised eyebrows on Wall Street, but few questioned the soundness of the move. For behind the sudden emergence of ACF-Wrigley as a major food chain was Charles Allen, Jr. (above), 53-year-old New York investment banker, and an old hand at injecting new life in flagging businesses.

I. A Corporate Shell

The present ACF-Wrigley combine had its beginnings in June, 1951, when Allen and some associates bought con-

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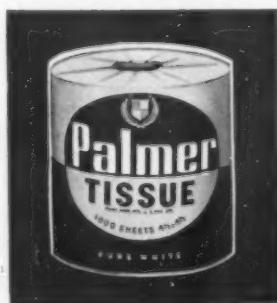
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trol of ACF-Brill from Avco Mfg. Co. Avco turned over 465,124 ACF-Brill common shares, \$5.4-million in assorted ACF-Brill loans to Allen for roughly \$5.5-million. Allen figured the purchase was a smart one: The company was turning out 10% of the buses in the U.S.; sales and profits were at high levels.

- **Sell-Out**—But ACF-Brill's share of the bus market was uncertain. Allen soon realized the company couldn't compete profitably with General Motors Corp., which dominated the field, and it couldn't exist wholly on defense contracts. Allen decided on a radical change.

In March, 1954, the company sold its big Philadelphia bus manufacturing plant for \$1.8-million to Penn Fruit Co. as a shipping center site, and leased space to fulfill the remaining government contracts. In October, 1954, ACF-Brill stockholders voted to spin off the company's Hall-Scott Motors Co. division in Berkeley, Calif. (now Hall-Scott, Inc.), maker of truck, bus, and marine engines. ACF-Brill got more than \$1-million of 15-year, 5% debentures of Hall-Scott, and stockholders received 1,003,434 shares of Hall-Scott common (now selling at around \$4 a share) on a share-for-share basis.

This left a company that produced nothing, but had \$6.5-million to \$7-million in cash, including about \$1.5-million receivables from buses sold on the installment plan.

- **Alternatives**—Three choices remained open to Allen, who personally owned 215,000 shares of ACF-Brill's 1-million outstanding common shares:

- Liquidate and divide up the cash among stockholders.
- Become a holding company by investing in one or more existing companies without taking over their management.

- Go into some other business.

Allen decided to take the third road: "We wanted to be constructive, and build up a business." More important, it offered the greatest opportunity for long-term gain. Cash value of the stock, if the company had liquidated at the time, came to little more than the market price, then hovering between \$7 and \$8 per share.

The big remaining question: What business should he enter?

II. Birth of an Idea

At this juncture, coincidence entered the picture. In late 1954, Allen received a call from a stranger, Marx H. Hausman, one-time treasurer of a modest Westchester County, N. Y., supermarket chain. Hausman wanted to talk about the grocery business.

- **Agent**—Hausman represented Nathan

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W. Lurie and his brother John E. Lurie, owners of Wrigley Stores, Inc., a chain of some 60 supermarkets in Detroit and southern Michigan. Hausman conceived the idea of putting together a network of semi-autonomous supermarket chains under a publicly owned corporate roof. He wanted Allen to build the structure, with Wrigley Stores as the first block. "It was a wonderful idea," says Allen.

Hausman, a 71-year-old, semi-retired New Yorker, explains: "The Midwest was full of smart and enterprising grocery men. They were putting all their profits back into their businesses. It occurred to me they could sell part of their ownership and still not give up control. They wouldn't have to worry about financing and could salt away some money for their old age."

He suggested the idea to Nathan Lurie, one of the best known supermarket operators. Lurie was intrigued, as were several other independent operators with whom he and Hausman discussed the proposal.

Allen's sometimes spectacular, usually successful investment activities were known to Hausman. Thus the phone call on behalf of the Luries. Allen assigned associate Marvyn Carton to investigate the proposal. Allen had looked into other industries as a place to put ACF-Brill's cash. He had already turned down an oil venture and a merger with another automotive concern.

- Profitable—Carton found that supermarkets accounted for 55.1% of the nation's retail food business, although representing only about 5% of all the retail stores in which groceries were sold.

They had grown in number from a little over 6,000 in 1940 to about 20,500 by 1955. And every economic weathervane indicated the growth would continue. It was a high-volume, low markup retail business, so bigness was a decided asset. In the first nine months of 1955 there were no less than 36 supermarket mergers.

- Stable—What's more, the food business was stable, brought a high return on invested capital. Wrigley's newest stores averaged almost \$2.5-million in annual sales, with after-tax income of roughly \$37,500.

The total cost of inventory and fixtures for each store (the store itself was leased) came to about \$200,000, of which \$100,000 was borrowed. Thus, on an equity of \$100,000 there was 37.5% yearly return.

The average Wrigley Stores unit did close to \$1.7-million a year in sales—larger than average volume for most supermarkets. Only Food Fair Stores, Inc., and Penn Fruit had better average yearly unit sales. The Lurie brothers had been active in food retailing since 1922, and John Lurie was one



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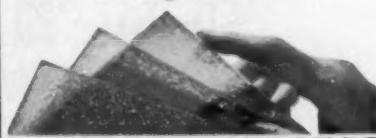
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of the founders of the Super Market Institute.

Allen & Co. bought half ownership of Wrigley Stores for \$64-million cash in February, 1955. In June, ACF-Brill bought the package from Allen & Co. for the same price.

III. The Line Forms

With the Luries leading the way—Nate became board chairman, John executive vice-president of the soon-to-be-formed ACF-Wrigley Stores, Inc.—several other independent operators followed along in close order. Planning to increase the number of ACF-Brill authorized common shares from 1-million to 7.5-million, Allen and his associates entered into a fistful of agreements for stockholders to vote on Dec. 21, 1955.

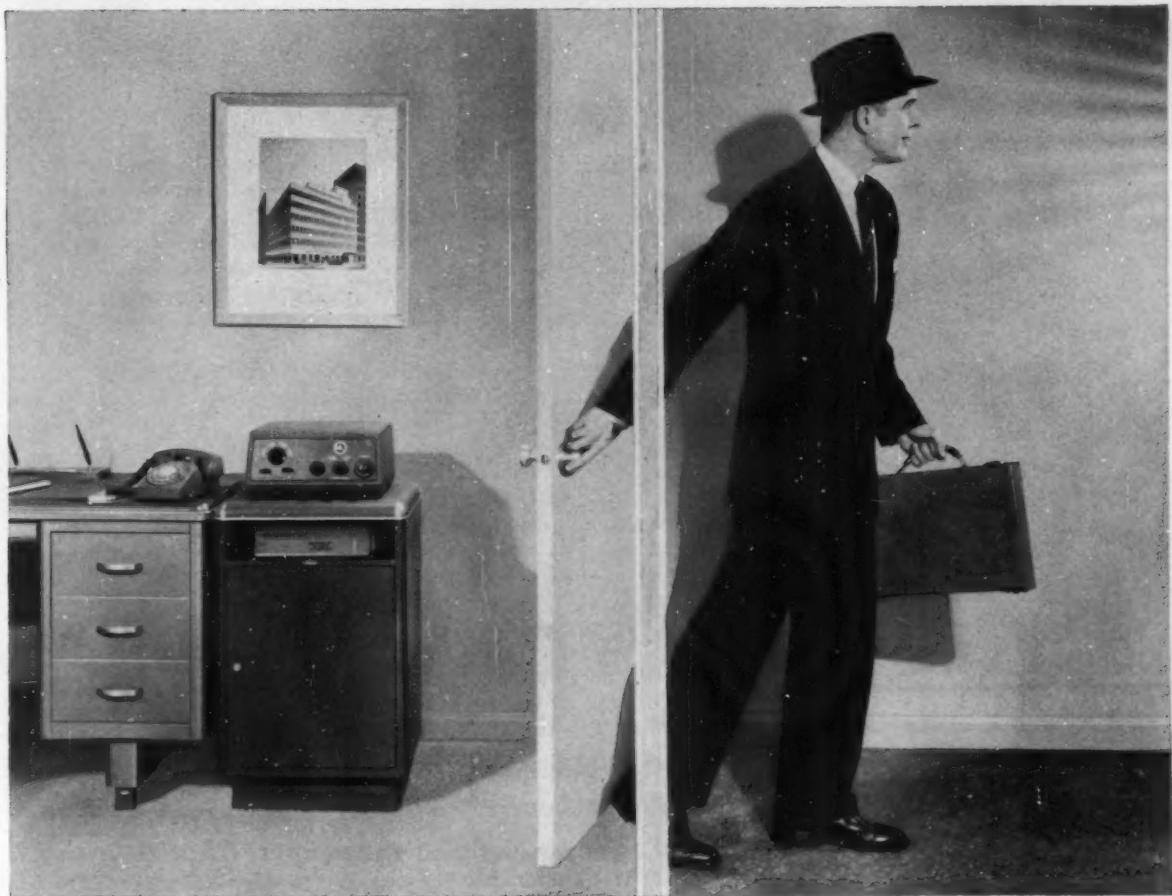
Sylvan N. Goldman, president of Humpty Dumpty, brought his stores into the combine for 415,000 shares and \$5-million in cash, became president of the corporation with Humpty Dumpty director Norman Hirschfield as financial vice-president. Hirschfield, former president of Consolidated Gas Utilities Corp. and an ex-Wall Street broker, was an old friend of Allen's. Abner A. Wolf, head of Detroit's Abner A. Wolf, Inc., got 345,000 shares for his big wholesale grocery operation. S. C. Shaye sold his 33-store Big Bear Markets of Michigan, Inc., chain for 513,118 shares.

• **New Name**—Part of the final merger, too, was the purchase of the remaining half of Wrigley for 1-million shares and ratification of the purchase of the first 50% from Allen & Co. ACF-Brill stockholders voted for the mass merger and O.K.'d changing the company's name to ACF-Wrigley Stores, Inc. At the same time Allen and three close associates were elected to the 18-man board.

"It was lovely the way the whole thing fitted together. We couldn't have done better had we planned it with the help of a crystal ball," Allen says.

Today, out of some 3.5-million outstanding common shares, about 55% are owned by operating management—in each case the same people who ran the individual chains before they merged (total stockholders: about 6,000). Allen still owns the same 215,000 shares he had before. For acting as "finder" of the original deal, Hausman received options to buy 25,000 shares of ACF-Wrigley common at \$12 a share between July 1, 1957, and June 30, 1959, or at \$15 a share between July 1, 1959, and June 30, 1961. Allen & Co. got the same option for 125,000 shares. Currently, the market price is pushing \$18 a share. Allen says, "I don't plan to sell." END

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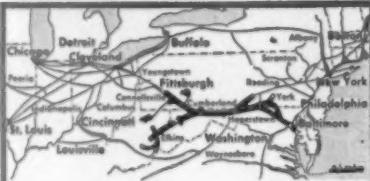
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In Management

To Ride High in Missiles,

Ford Buys West Coast Brains

Ford Motor Co. has set up a new \$10-million subsidiary, Aerotrantic Systems, Inc., for guided missile and weapons system development. To staff this California venture, Ford is picking up talent by absorbing Systems Research Corp., an independent Los Angeles company—and is giving its new talent a part of the business. **Ford will hold 75% of the stock, the rest going to top Systems Research men, and later to others who may be enticed to join in.**

The talent Ford is getting belonged originally to Lockheed Aircraft Corp. Systems Research is composed largely of a group of scientists who left Lockheed's Missile System Div. last year, objecting that they were not given control of projects from conception, through test, to final production (BW—Dec. 24 '55, p90). After quitting they formed their own company.

Now they stand a chance to have their way—and perhaps catch up with Ramo-Wooldridge Corp. (BW—Jan. 15 '55, p66), a successful creation of scientists who left Hughes Aircraft Co. to set up on their own, later tied up with Thompson Products, Inc., for capital.

A plant site for Aerotrantic hasn't been chosen yet (in either the Los Angeles or San Francisco area). At first it will work only on research and development, but Ford says it's ready to back its new offspring all the way into production.

Sign of the Times—Auto Parts

Supplier Diversifies Out of Autos

Last week Houdaille Industries, Inc., Buffalo, N. Y.—formerly Houdaille-Hershey Corp.—a leading producer of auto parts (1955 sales, \$85-million) jumped into the ready-mix concrete business.

For an undisclosed amount, Houdaille purchased all the stock of Commonwealth Concrete Co., a New Jersey and Pennsylvania transit-mix concrete trucker, operating a 100 truck fleet.

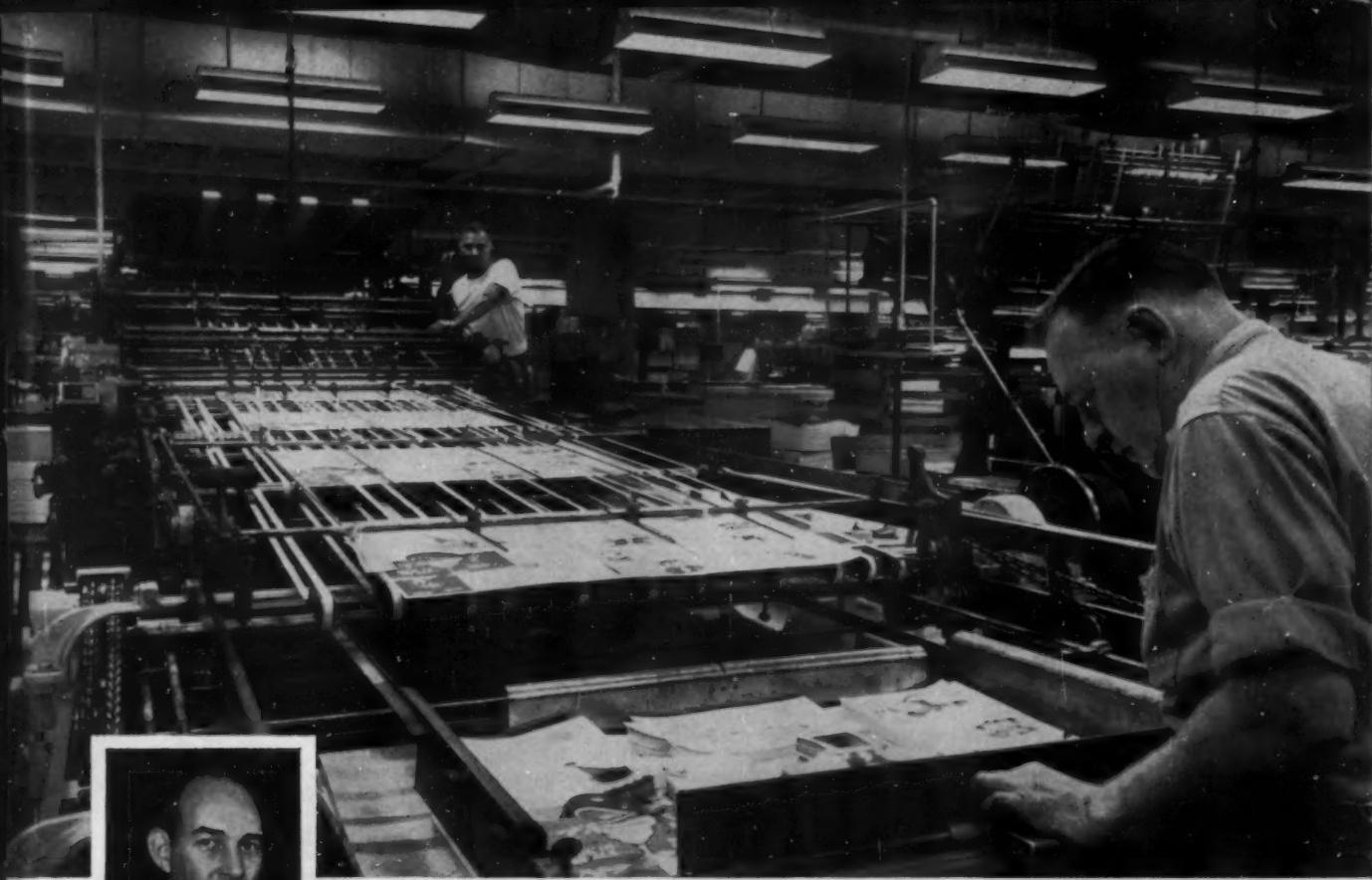
Like other auto parts manufacturers (such as Hupp Corp. and United Industrial Corp., formerly Hayes Mfg. Corp.) Houdaille wants to diversify out of an uncertain supply position into some other growth field. Last year it bought Frontier Industries, Inc., a diversified manufacturer. This March it picked up North Jersey Quarry Co., operating stone quarries, sand and gravel pits in New Jersey and Pennsylvania. Concrete trucking followed naturally, and Houdaille plans other similar expansions.

Houdaille's aim: to derive at least one-half of future profits from businesses other than auto parts.

Cerro De Pasco Keeps on Expanding

Its Diversified Activities in the U.S.

Cerro de Pasco Corp., U. S.-owned Peruvian miner of nonferrous metals (BW—Oct. 22 '55, p122), is still expanding its U. S. activities. Last week it:



"We licked a 50 year old moisture problem with FOAMGLAS roof and wall insulation"

relates Joseph D. Bradley, Production Manager, Rust Craft Greeting Cards

"Thanks to FOAMGLAS roof and wall insulation, we've licked a moisture problem that plagued us for over 50 years," relates Mr. Joseph D. Bradley, Production Manager of Rust Craft, Dedham, Mass. Producing over 300 million quality greeting cards a year demands close control of moisture content in paper stock. Lack of it could cause damaging paper losses, waste skilled man-hours and machinery time.

Rust Craft's modern plant was finished in June, 1955. Mr. Bradley says: "We designed the paper storage and the paper and film processing sections around FOAMGLAS because it's moisture-proof. In those areas we must

maintain a precisely controlled temperature and humidity. These warm, moist conditions could ruin other insulations, but not FOAMGLAS. It has given us dependable insulating protection since installation, and we anticipate many more years of trouble-free performance.

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Joined with American Metal Co., Ltd., another large mining outfit, to back Louisiana drilling contractor J. C. Trahan in offshore operations.

Fairmont, a family-controlled company, has an annual capacity of about 30-million lb. of aluminum products, employs some 500 people, and has sales in the \$10-million range.

Cerro de Pasco says the object of these U.S. ventures is to develop a strong base of U.S. earnings, make its stock well known, give it an attraction that purely foreign stocks just don't have with U.S. investors.

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Management Briefs

Industrial Research Programs: Columbia University plans a five-day conference June 11-15, on how to integrate them into other company operations.

Corporation income taxes yield less than half the total individuals pay. Internal Revenue Service reports it collected \$40-billion in 1955 income taxes from individuals, \$18.6-billion from corporations.

Wyandotte Chemicals Corp. makes its stock market debut later this month with 100,000 shares of common. The company's first public offering, the shares will be priced at about \$30 each.

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Face of the Future: Growth and Change

The most important story of 1956 for business is likely to be this week's report on business plans for capital investment (page 23).

The study, done by the McGraw-Hill Dept. of Economics, is important because it shows capital investment is still rising. Investment this year is planned to run almost \$39-billion, a full 30% ahead of last year. That in itself practically underwrites good business for the rest of the year.

Much more important are the insights the study throws on the future. For example, it shows:

- Investment in 1957 is already planned to run on at the 1956 level.
- Future planning by companies—for research and new products as well as future expansion—has moved ahead in a giant stride. Some 88% of the companies surveyed were able to give specific plans as far ahead as 1959.

This is important to business—and to every American citizen—because these plans are the warp and woof of the future. The steel mills and auto plants and computer-guided machine tools now being planned for 1958 mean new jobs and better jobs, and new products and better products. The \$5.5-billion being put into research this year is only one measure of the huge and continuing effort of hundreds of thousands of scientists and technicians to create new processes and new products. It is an effort that has expanded mightily since 1940, has become built into the operations of industry; and its promise for the future is beyond measuring. We have, however, one indication of that future from the study. Companies expect that by 1959, only three years from now, at least 11%—and perhaps more—of their sales will come from products they were not making last year.

Capacity for 1960

In the short run, in an economy already stretching its supplies of materials and manpower, the planned rise in spending for new industrial facilities will intensify some problems (page 28). Perhaps the biggest question is whether industry can finance the \$39-billion worth of work it plans for 1956. With the Federal Reserve Board keeping a tight squeeze on money (BW—May 5 '56, p196), that is a real problem.

But, it is the long-run view, the glimpse into the future provided by this study, that is impressive, even startling. For a few key figures in the report give you a glimpse of what industry is accomplishing over the span of the decade that began in 1950.

Consider the figures on industry's capacity, for example. This year, the manufacturing industries

will raise their capacity 8%. That in itself is impressive. But at the end of the year, manufacturers will have half again as much productive capacity as they had in 1950, during the Korean War. By 1959, they plan to add almost 80% to that 1950 figure. Project that just a bit and you see American industry doubling its capacity in little more than a decade.

Changing the Economy

The very thoroughness of the planning for plant and equipment suggests that we may have come further than economists have realized in taming the business cycle. For years they've known that industry's investment was one of the basic keys to the behavior of the general economy. And, before World War II, it was volatile. Now it may be a key stabilizing element, a built-in and controlled propelling force. Time alone will show how important this change is. But it may be a basic change making over our economy.

The survey throws light on another great change in the U.S. economy—the impact of research and the technological change that accompanies it. Companies are spending more than \$5-billion for research this year. By 1959, they expected expenditures to be \$6.3-billion.

The big increases in research will come in those industries—such as primary metals, nonelectrical machinery, and autos—that have not been major spenders on research in the past. The opening this month by General Motors and U. S. Steel of big new laboratories shows how research is spreading.

From these figures you have a glimpse of a far-reaching change in industry. The inventor was brought into industry years ago in a few leading companies. But now a very large share of all industry is gearing itself to meet—and to create—technological change.

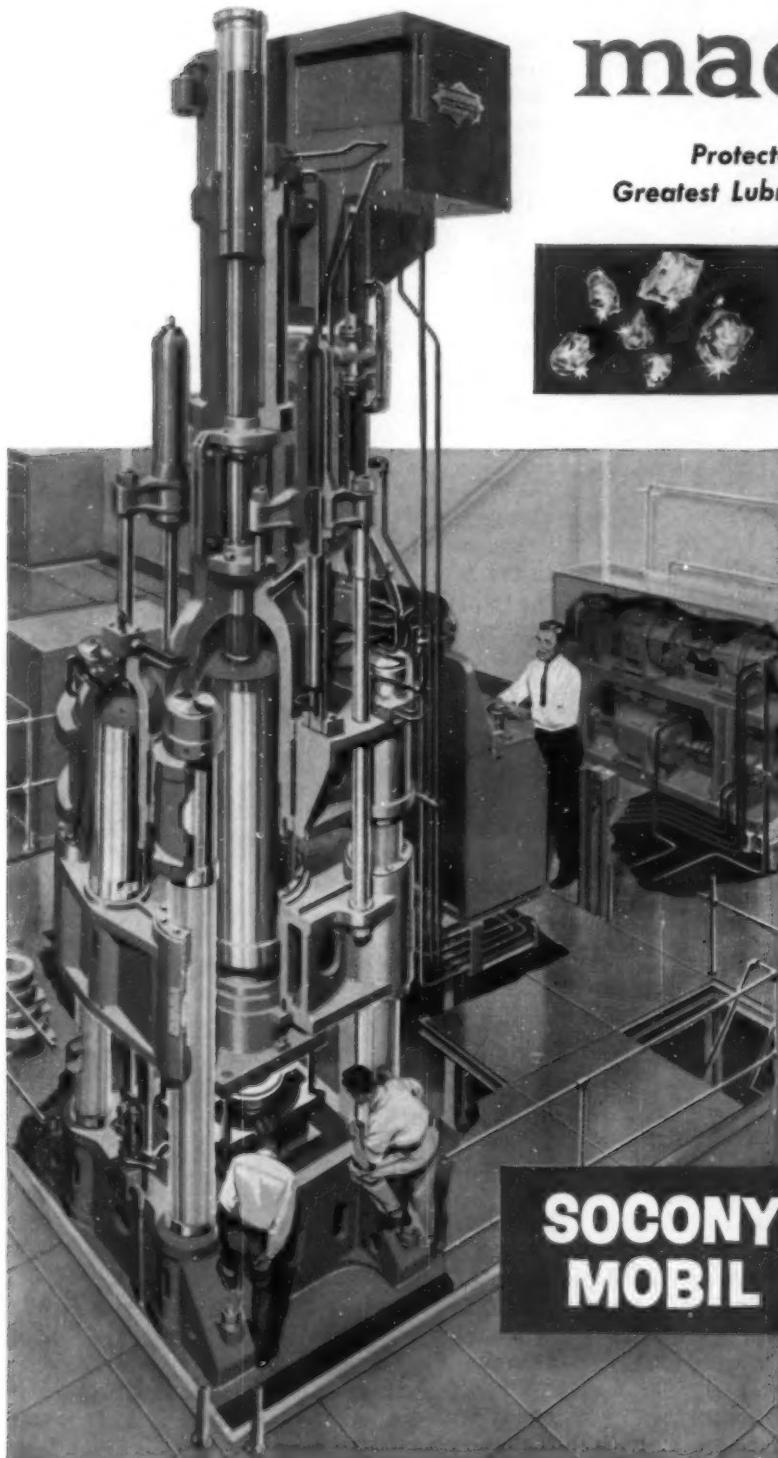
World War II demonstrated industry's flexibility. It showed dramatically how companies could switch from, say, toasters to machine guns. But we are geared now as never before to create change. More and more researchers are working deliberately to make obsolete the processes, plants, and products around which our civilization is organized. What may come of this may not be so spectacular as was the Industrial Revolution. But it does suggest that the future will see change—from things as diverse as atomic energy and tranquilizing drugs—coming even more rapidly than it is now.

This, in short, is the glimpse of the future this survey provides: continuing growth and continuing change.

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